



GOVERNMENT OF KERALA

**SEASON AND CROP REPORT**  
**OF**  
**KERALA STATE**  
**1978-79**

DIRECTORATE OF ECONOMICS AND STATISTICS  
TRIVANDRUM

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## FOREWORD

This report deals with the different aspects of agricultural economy of the State relating to the year 1978-79. This is divided into four parts.

Part I	Narrative part
Part II	Summary Tables
Part III	Detailed Tables
Part IV	Appendix

I hope that the report will give a comprehensive picture of the State of Agriculture in Kerala during the year.

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Trivandrum,  
5-9-1983.

## PART I

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# SEASON AND CROP REPORT FOR KERALA STATE 1978-79

## 1. General

Kerala is one of the small States of Indian Union with an area of 38855 Sq. kilometres. It lies in the South West corner of the country between 8°-18' 12°-48' North latitude and 74°-52' 77° 22' East longitude. The State occupies 1.2 per cent of the total geographical area and has a long coastal line of 580 kms and the width varies from 130 kms. in the middle to 32 kms. in the extremities.

Kerala State is topographically divided into three natural regions viz. highland, midland and lowland. The highland includes forests of western ghats and form the natural boundary in the east. Lowland extends over the sea coast in the West. It is a narrow strip of coastal belt stretching from one end of the State to the other. Midland region is the land lying between the highland and lowland, and is a vast tract gifted with numerous rivers, lakes, backwaters and different types of crops.

The highland region is most suited for cultivation of plantation crops like tea, rubber, coffee and cardamom. Paddy and coconuts are grown abundantly in the midland region which is known for its diversity in cropping pattern.

Apart from this, arecanut, sugarcane, tapioca, banana etc. are also cultivated on an extensive scale in this region.

Paddy and coconut are the most important crops of the State. Paddy is cultivated during three seasons viz. Autumn (Virippu) Winter (Mundakan) and Summer (Punja) in a year. Though paddy is cultivated in Autumn and Winter seasons on an extensive scale throughout the State it is raised on a relatively smaller area in summer. Tapioca, groundnut, pulses, tubers, sesame and ginger are other important seasonal crops. Besides, annual crops like banana and plantains, sugarcane and pineapple are also grown. Among the perennial crops mention may be made of the major ones namely coconut, arecanut, cashew and pepper in addition to the plantation crops like tea, coffee, rubber and cardamom. Jack and mango are also grown extensively in the State. Cocoa is brought under larger areas besides eucalyptus and oilpalm trees.

The normal rainfall of the State is about 3,000 mm. Both the south-west monsoon and north-east monsoon give good rain to the State. When the south-west monsoon commences by the end of May or at the beginning of June and continues till September, the north-west monsoon is active in the months of October and November. However the noteworthy features of distribution of rainfall are its progressive increase from the stations on the coast to stations at the foot of the ghats. There are 44 rivers in the state. Of these 41 are west flowing and the remaining 3 are east flowing. The State has a number of lagoons and backwaters. The backwaters are interconnected with a net work of canals and provide facilities for internal navi-

gation. The State is divided into 11 districts and 57 taluks. The Districts are, Trivandrum, Quilon, Alleppey, Kottayam, Idukki, Ernakulam, Trichur, Palghat, Malappuram, Kozhikode and Cannanore.

## 2. Population

The population of the State as per 1971 census is 213.47 lakhs and density of population is 548 per sq. km. w.

The estimate of population for 1978 is 245.84 lakhs. The districtwise distribution of population and density per sq. km. as per 1971 census are given below:

TABLE—1

### Districtwise Distribution of Population and Density.

<i>District</i>	<i>Population 1971 census lakhs</i>	<i>Density per sq. km. 1971 census</i>
(1)	(2)	(3)
Trivandrum	21.99	1003
Quilon	24.13	522
Alleppey	21.26	1128
Kottayam	15.39	679
Idukki	7.65	149
Ernakulam	21.64	914
Trichur	21.29	702
Palghat	16.85	383
Malappuram	18.56	510
Kozhikode	21.06	365
Cannanore	23.65	415
Kerala	213.47	549

The per capita land available for cultivation is 0.10 hectares and the per capita land cultivated is 0.09 hectares. It points to the fact that almost all the available land suitable for cultivation has not been put to use. In literacy, Kerala is the leading State in India. According to 1971 census the percentage literacy in the State is 60.16 whereas the All India rate is 29.32 only.

## 3. Rainfall.

The average normal rainfall in the State varies from 2001 mm. in Trivandrum district to 3796 mm. in Kozhikode district. The normal and actual rainfall for the year are furnished in the following table:

TABLE II

Statement showing Districtwise normal rainfall and actual rainfall 1978-79

<i>District</i>	<i>Normal rainfall</i>	<i>Actual rainfall on 1978-79</i>
Trivandrum	2001.6	2119.5
Quilon	2760.2	2850.3
Alleppey	3012.0	2747.1
Kottayam	3462.6	2608.1
Idukki	2898.9	2809.0
Ernakulam	5548.5	3183.0
Trichur	3177.4	3302.9
Palghat	2397.7	2099.0
Malappuram	2900.1	2975.1
Kozhikode	3796.0	3639.8
Cannanore	3437.9	2776.9
State Average	3017.6	3085.4

The monthly normal rainfall and monthly actual rainfall for the year are furnished in Tables 1.1 and 1.2 of Part III.

#### 4. Soil

The different types of soil seen in the state are classified as follows.

1. The hilly and forest soil seen all along the eastern part of the State
2. The sandy soil seen in the coastal belt
3. The laterite soil seen in the midland
4. The black soil occurring as patches and seen in the eastern border of Palghat District.
5. The peat or kari soil in Alleppey District.
6. The alluvial soil seen along the southern and eastern part of Vembanad lake and in small patches in Trivandrum District.
7. The red soil found in the extreme tips of Trivandrum Taluk.

A Statement showing the detailed classification of soil has been furnished as Appendix-6 of Part IV.

#### 5. Communication facilities

The State has a well knit road transport system coupled with broad-gauge railway line between Trivandrum, State capital in the south and Kasargod in the north. It has facilitated easy access to the different parts of India. The neighbouring States are also connected by well developed roads. Moreover the backwaters with a net work of connecting canals provide excellent water transport facilities. Besides the major port of Cochin there are eight minor ports and 3 intermediary ports in the State. There are two aerodromes one at Trivandrum operating international flights to Gulf countries, Ceylon and Mali Islands and the other at Cochin.

Aerodrome at Trivandrum was declared as an international airport with ample facilities which provides enough possibilities for tourism in the State.

### 6. Land utilisation.

Prior to 1975-76 estimates on various parameters relating to Agricultural Statistics were formed on the basis of the data collected through land utilisation surveys organised by this department. The estimates so obtained at taluks or even at district level could not be assured of the desired precision due to the small sampling fraction adopted for this survey. It was in this context that the Government of India came up to finance a scheme for establishing an agency in the State for reporting agricultural statistics as part of an all India scheme for improvement of Agricultural Statistics namely the "Timely Reporting Survey". The survey was started in the State in 1975-76 and 10% the villages (134) were enumerated. In the year 1977-78, 20% of the villages (265) were selected and enumerated and in 1978-79, 265 villages i.e. 20% of the villages were also surveyed. The land utilisation particulars of the State relating to 1978-79 are furnished in Table A of the summary tables with districtwise break up in Table 2.1 of the detailed tables. The particulars of area under different types of use are given below.

(1) *Total area of the State:* The State has a total area of 3885497 hectares according to village papers. The districtwise area of the State is furnished in the table given below.

TABLE III  
District wise area of the State

<i>District</i>	<i>Area in hectares as per village Records</i>	<i>Percentage</i>
Trivandrum	218600	5.6
Quilon	474290	12.2
Alleppey	182270	4.7
Kottayam	219550	5.7
Idukki	515048	13.2
Ernakulam	235319	6.1
Trichur	29390	7.7
Paighat	438980	11.3
Malappuram	363230	9.3
Kozhikode	371150	9.6
Cannanore	567670	14.6
State	3885497	100.0

(2) *Forest:* The forest area in the State is 1081509 hectares i.e. 27.3 per cent of total geographical area. Districtwise details for 1977-78 and 1978-79 are given in table IV below.



TABLE IV  
Area under Forests

<i>District</i>	<i>Area under Forest 1977-78</i>	<i>Hectares 1978-79</i>
Trivandrum	49861	49361
Quilon	236048	236048
Alleppey	518	518
Kottayam	8141	8141
Idukki	260993	260993
Ernakulam	8123	8123
Trichur	103619	103619
Palghat	136257	136257
Malappuram	103417	103417
Kozhikode	90876	90376
Cannanore	83656	83656
State	1081509	1081509

(3) *Land Put to non-agricultural uses*:—The land put to non-agricultural uses during the year is 260443 hectares whereas the estimate for the previous year was 257276 hectares. The district-wise break up is furnished in the following table.

TABLE V  
Statement showing area under non-agricultural uses

<i>District</i>	<i>Area under non-agricultural uses (hectares)</i>	
	<i>1977-78</i>	<i>1978-79</i>
Trivandrum	16640	16656
Quilon	24372	24631
Alleppey	30230	30869
Kottayam	16416	17537
Idukki	13570	13984
Ernakulam	27610	29823
Trichur	20310	21146
Palghat	32685	32685
Malappuram	16667	16867
Kozhikode	21688	20752
Cannanore	37088	35493
State	257276	260443

Cannanore, Palghat, Alleppey and Ernakulam districts have larger area under non-agricultural uses.

(4) *Barren and uncultivable land*:—The area under this category is 74613 hectares as against 75382 hectares in 1977-78. About 3/4 of the area under the category falls in the district of Idukki, Palghat and Cannanore.

(5) *Perennial pastures and grazing land*:—The estimated area under this class during the year under report is 6245 hectares as against 10616 hectares Idukki, Cannanore and Palghat districts, account for the major portion of the area under this category.

(6) *Land under miscellaneous tree crops*:—The area under this item is estimated as 66374 hectares during the year 1978-79 whereas the area for the previous year was 72668 hectares. More than 75% of the area under this class is situated in Idukki, Cannanore and Kozhikode districts.

(7) *Cultivable waste land*:—The estimated area under cultivable waste land during the year is 123341 hectares whereas the area for the previous year was 118256 hectares. Major portion of Idukki, Palghat, Malappuram and Cannanore falls under this category. The district-wise break up is given in the following Table VI.

TABLE VI

## Area under cultivable waste land (hectares)

District	1977-78	1978-79
Trivandrum	2331	2272
Quilon	1217	1491
Alleppey	2792	2434
Kottayam	1407	1109
Idukki	39952	42582
Ernakulam	6172	5497
Trichur	5295	5141
Palghat	20080	23115
Malappuram	13172	12976
Kozhikode	5852	5027
Cannanore	19986	21700
State	118256	123341

(8) *Fallow Land other than current fallow*:—An area of 26598 hectares is estimated to be under this category during the year 1978-79 as against 27118 hectares for the previous year.

(9) *Current fallow*:—It is estimated that an area of 42246 hectares is under current fallow in the State during this year. The corresponding estimate for the previous year was 46111 hectares.

The district-wise estimates for the two years are furnished below:

TABLE VII  
Current fallow (hectares)

Districts	1977-78	1978-79
Trivandrum	2411	1261
Quilon	1834	1917
Alleppey	5435	3817
Kottayam	3783	3665
Idukki	1149	1287
Ernakulam	4171	3714
Trichur	4501	4266
Palghat	6508	6429
Malappuram	7825	7883
Kozhikode	2495	2786
Cannanore	5999	5221
State	46111	42246

(10) *Net area sown*:—The estimate of the year under net area sown show a slight increase by 0.13% when compared to that of the previous year. The area under this item occupies 56.78 per cent of the total area of the State and 76.3 of the total cropped area. The district-wise estimates are given in the following table.

TABLE VIII  
Statement showing net area sown District-wise

District	Net area sown (hectares)	
	1977-78	1978-79
Trivandrum	144010	144898
Quilon	206137	205914
Alleppey	141530	142648
Kottayam	184109	184755
Idukki	157871	160328
Ernakulam	182622	182335
Trichur	159792	158228
Palghat	216260	215346
Malappuram	207110	207635
Kozhikode	232911	226242
Cannanore	368917	375789
State	2201269	2204128

(11) *Area sown more than once*:—The area sown more than once in the State during 1978-79 is 681582 hectares whereas in the previous year it was 722535 hectares i.e. a decline of 5.67 per cents over the last year. The district-wise details are presented in the following table.

TABLE IX

## District-wise distribution of area sown more than once

District	Area sown more than once (hectares)	
	1977-78	1978-79
Trivandrum	82830	80611
Quilon	118453	101302
Alleppey	79629	66391
Kottayam	53508	50517
Idukki	1919	3685
Ernakulam	71607	76311
Trichur	74914	79332
Palghat	101776	110507
Malappuram	70384	48761
Kozhikode	49646	54766
Cannanore	18589	9399
State	722535	681582

(12) *Total cropped Area*:—The total cropped area of the State during the year has shown a slight decline of 1.30 per cent over that of the previous year. It is estimated as 2885710 hectares during 1978-79 which forms 77.27% of the total geographical area of the State. District-wise distribution is given in Table X.

TABLE X

## District-wise distribution of total cropped area

District	Total cropped area	
	1977-78	1978-79
Trivandrum	226840	225509
Quilon	324590	307216
Alleppey	221159	209039
Kottayam	237617	235272
Idukki	159790	164013
Ernakulam	254229	258646
Trichur	233986	237560
Palghat	318036	325853
Malappuram	277494	256396
Kozhikode	282557	281018
Cannanore	387506	385188
State	2923804	2885710

(13) *Total cropped area and net area sown.*—District-wise distribution of net area sown and total cropped area in the state during 1978-79 are given in table XI below.

**TABLE XI**  
**District-wise distribution showing percentage of total cropped area to net area sown**

<i>District</i>	<i>Net area sown</i>	<i>Total cropped area hectares</i>	<i>Percentage of total cropped area to net area sown</i>
Trivandrum	144898	225509	156
Quilon	205914	307216	149
Alleppey	142648	209039	147
Kottayam	184755	235272	127
Idukki	160328	164013	102
Ernakulam	182335	258646	142
Trichur	158228	237560	150
Palghat	215346	325853	151
Malappuram	207635	256396	23
Kozhikode	226262	281018	124
Cannanore	375789	385188	103
<b>State</b>	<b>2204128</b>	<b>2885710</b>	<b>131</b>

The percentage of total cropped area to net area sown is highest in Trivandrum District.

(14) District-wise gross area under seasonal, annual and perennial crops during 1978-79 is given in table XII.

**TABLE XII**  
**District-wise Statement showing area under seasonal Crops and annual Crops**

<i>District</i>	<i>Year 1978-79</i>		<i>Perennial crops</i>	<i>Total</i>
	<i>Seasonal crops</i>	<i>Annual crops</i>		
Trivandrum	94776	6699	124034	225509
Quilon	134066	6741	166359	307216
Alleppey	108557	8417	92065	209039
Kottayam	75592	6780	152900	235272
Idukki	25352	5557	133104	164013
Ernakulam	127518	6804	124324	258646
Trichur	134578	5778	97204	237560
Palghat	231822	5411	88620	325853
Malappuram	114803	4977	136611	256396
Kozhikode	66093	4870	210555	281018
Cannanore	109382	6964	268342	385188
<b>State</b>	<b>1222544</b>	<b>69048</b>	<b>1594118</b>	<b>2885710</b>

Of the gross area under cultivation during the year 55.24 per cent are under perennial crops 42.37 under seasonal crops and 2.39 per cent under annual crops.

### 7. Area under crops

Agricultural crops in the State are broadly classified into food crops and non-food crops. The details of area under food crops in the State have been furnished in Table C of the summary tables and district-wise area in Table 3.1 of the detailed tables.

#### A. FOOD CROPS

The area under food crops in the State is 1804045 hectares where as the corresponding figures for the previous year was 1837616 hectares. The area under food crops in each district and percentage of that to the total cropped area in the district are as follows.

TABLE XIV

**Statement showing area under food crops and percentage to total cropped area**

Sl. No.	District	Total cropped area (hectares) (1978-79)	Area under food crops 1978-79	Percentage of area under crops in each district to the State total	Area under food crops as percentage to total cropped area
1	Trivandrum	225509	139868	7.75	62.02
2	Quilon	307216	180153	9.99	58.64
3	Alleppey	209039	135313	7.50	61.73
4	Kottayam	235272	114183	6.33	48.53
5	Idukki	164013	99574	5.52	60.69
6	Ernakulam	258646	166187	9.21	64.25
7	Trichur	237560	171748	9.52	72.30
8	Palghat	325853	260540	14.44	79.26
9	Matappuram	256396	167073	9.26	65.16
10	Kozhikode	281018	128292	7.11	45.65
11	Cannanore	385188	241141	13.37	62.60
	State	2885710	1804045	100.00	62.52

The area under food crops is maximum in Palghat District followed by Cannanore & Quilon District. The percentage of area under food crops to total cropped area is also highest in Palghat district. The relative position of some of the important food crops during 1977-78 to that of the 1978-79 is given in the following paragraphs.

1. *Paddy*.—The area under paddy during the year under report is estimated as 799238 hectares as against 840374 hectares in 1977-78.

TABLE XV

## Statement showing area under paddy

District	Area under Paddy (hectares)	
	1977-78	1978-79
Trivandrum	34529	33080
Quilon	50383	50815
Alleppey	90907	75501
Kottayam	43528	37449
Idukki	13805	8832
Ernakulam	99273	100165
Trichur	197768	115787
Palghat	171908	174413
Malappuram	88400	81462
Kozhikode	49380	48909
Cannanore	78523	72825
State	840374	799238

The area under paddy is largest in Palghat District and Smallest in Idukki District. Palghat District Accounts for 21.82% of the total area under paddy. Districtwise percentage distribution of area under Paddy and the percentage area under paddy to total cropped area are furnished below.

TABLE XVI

## Districtwise statement showing area under Paddy and percentage to total cropped area.

Sl. No.	District	Area under Paddy	Percentage to total	Percentage of area under Paddy to total cropped area
1	Trivandrum	33080	4.14	14.67
2	Quilon	50815	6.36	16.54
3	Alleppey	75501	9.45	36.12
4	Kottayam	37449	4.69	15.92
5	Idukki	8832	1.11	5.38
6	Ernakulam	100165	12.53	38.73
7	Trichur	115787	14.49	48.66
8	Palghat	174413	21.82	53.53
9	Malappuram	81462	10.19	31.77
10	Kozhikode	48909	6.12	17.40
11	Cannanore	72825	9.11	18.91
	State	799238	100.00	27.70

(2) *Other Cereals and millets*.—Jower, Ragi, Chama etc. are cultivated in the State. The area under these crops in 1978-79 comes to 5060 hectares. Out of this 1911 hectares were under Jower and 1332 hectares under Ragi. These are cultivated mainly in Palghat District.

(3) *Pulses*.—During the year under report the area under pulses is estimated at 35567 hectares as against 36733 hectares in 1977-78. Palghat district leads the rest for the cultivation of pulses.

(4) *Sugarcane*.—The area under this crop is estimated as 22247 whereas it was 20011 hectares during the previous year.

(5) *Pepper*.—Pepper is cultivated in 106743 hectares, compared to the corresponding figures 108666 hectares in 1977-78. There is a decrease of area under the crop by 1923 hectares. Cannanore District occupies 23.2 per cent of the total area under the crop in the State. Kozhikode comes next in the order of importance followed by Kottayam and Idukki.

(6) *Chillies*.—This crop is cultivated only in four districts of the State viz. Cannanore, Kozhikode, Malappuram and Palghat. The area under the crop during the year is 791 hectares as against 1215 hectares in 1977-78.

(7) *Ginger*.—Ginger is cultivated in an area of 12713 hectares during the year as against 12672 hectares during 1977-78. The important ginger growing districts are Kottayam, Ernakulam, Kozhikode, Cannanore & Quilon.

(8) *Turmeric*.—The extent of area under Turmeric during 1978-79 is 3811 whereas it was 3674 hectares in 1977-78.

(9) *Cardamom*.—The area under Cardamom works cut to be 55180 whereas it was 52008 hectares during the previous year. Idukki is the major cardamom producing district in the State.

(10) *Arecanut*.—The area under Arecanut for the year is 62317 hectares against the previous year's estimate of 62427 hectares. Cannanore, Malappuram, Kozhikode, Trichur & Ernakulam are important districts where arecanut is cultivated largely.

(11) *Mango*.—The area under mango is 61498 hectares during this year as against 62198 hectares during the previous year. The area of cultivation is more or less the same in all the districts.

(12) *Jack*.—Jack is cultivated in all the Districts. The area of the crop is 59899 hectares during the year.

(13) *Banana*.—The area of Banana cultivation is 13518 hectares whereas it was 10379 hectares during 1977-78.

(14) *Other Plantain*.—The area of other plantain during the year is 39824 hectares whereas it was 39721 hectares in 1977-78.



(15) *Cashew*:—The major cashew producing district is Cannanore. The upward trend noticed in the area under cashew during the previous year continued this year also. The total area under cashew during the year is 136552 hectares as against 126963 hectares during the previous year.

(16) *Tapioca*:—Tapioca is extensively cultivated in all the districts especially in Quilon & Trivandrum Districts, during 1978-79. Tapioca is cultivated in an area of 273483 hectares. The estimate for the previous year was 323278 hectares.

### B. Non food crops

The nonfood crops cover only 37.48 percent of the total cropped area of the state. The total area under non food crops during 1978-79 is estimated as 1081665 hectares as against 1086188 hectares during the previous year.

The changes in area under certain crops during the year 1978-79 compared to that of the previous year are given below.

(1) *Groundnut*:—This crop is cultivated only in Palghat District 13935 hectares in 1978-79 as against 12655 hectares during the previous year.

(2) *Sesamum*:—This crop is mainly cultivated in Quilon and Alleppey districts. About 26.8% of the total area under the crop is in Alleppey district. It is estimated that an area of 17558 hectares is under the crop during the year under report. The corresponding figures during the previous year was 17549.

(3) *Coconut*:—Coconut is the most important nonfood crop of the State. About 64% of the area under nonfood crops and 24% of the total cropped area fall under this category. It is cultivated fairly on a large scale in all the districts. Kozhikode stands first in extent of area under the crop followed by Cannanore & Quilon districts. The estimate for the year 1978-79 under coconut is 660628 hectares as against 673479 hectares during the previous year.

(4) *Cotton*:—Palghat is the main cotton growing district in the State. It accounts for 5354 hectares during the year under report as against 5286 hectares.

(5) *Tobacco*:—Tobacco is cultivated only in Cannanore district. The area under the crop is estimated as 404 hectares during 1978-79.

(6) *Tea*:—The area under the crop during the year 1978-79 is estimated to be 36090 hectares whereas it was 36112 hectares during the previous year. About 66 percent of the total area under the crop is in Idukki district.

(7) *Coffee*:—Coffee is another plantation crop of the State. Among the Districts Kozhikode occupies the foremost place and Cannanore District stands second in the extent of cultivation of coffee. More than 50% of the total

area under the crop is in Kozhikode district. During the year under report the area under cultivation in the State was 53345 hectares where as for the previous year it was 52644 hectares.

(8) *Rubber*:—Rubber is cultivated extensively in all districts. Kottayam, Quilon, Ernakulam and Cannanore are the leading districts in rubber cultivation. Kerala has a monopoly for rubber cultivation in India. The area under the crop was 214415 hectares during 1978-79 as against 212271 hectares during 1977-78.

### 8. Irrigation:

Government canals are the major source of irrigation in the State. During the year 1978-79.....percent of the net area sown is brought of under irrigation. The net area irrigated in the State during the year in 229523 hectares as against 228184 hectares during the previous year. The tables showing the source of water supply and net area irrigated during 1978-79 is given in table B.

### 9. Weather and Crop condition:

Complete failure of rain is unknown in Kerala as the benefit of both monsoons are available in the State. This does not mean that seasonal distribution of rain may not be unfavourable to agriculturists. Generally heavy rain fall is seen in September and October throughout the State causing heavy damage to almost all the crops especially paddy cultivation. District-wise details are furnished briefly in the following paragraph regarding the weather and crop condition of the state during the year under review.

#### (1) TRIVANDRUM DISTRICT

(a) *Nedumangad Taluk*:—The rainfall condition during the khariff and rabi season were quite satisfactory and no damages on crops happened during the year.

(b) *Neyyattinkara Taluk*:—Due to flood 1340 acres of land under various crops were destroyed and the loss is estimated as Rs. 21 lakhs during the year.

(c) *Trivandrum Taluk*:—The crop condition during the year was satisfactory except in November 1978. During November 1978 heavy rain and flood caused as loss of 100 acres of paddy cultivation. The loss of paddy during November 1978 and June 1979 was estimated to Rs. 1.75 lakhs.

(d) *Chirayinkil Taluk*:—The rain fall condition during the khariff season and rabi season was normal during Agricultural year 1978-79 and no damages were reported.

#### (2) QUILON DISTRICT

(a) *Quilon Taluk*:—In Kharif season rain fall was normal. No crop damage was reported from any parts of the Taluk. In rabi season the untimely rain at the beginning of sowing and heavy rain at the time of flowering and harvesting of the crop caused considerable damage to winter paddy and nominal damages affected the crops tapicca, banana, and pulses. Quantity of loss was estimated to Rs. 50,000 during the season.

(b) *Karunagapally Taluk.*—Late arrival of south west monsoon has delayed the sowing operations and hence the area under paddy cultivation decreased to 10% in khariff season in the taluk. There was heavy rain during rabi season followed by flood in many parts of the Taluk. The crop damages due to flood were estimated to be around Rs. 5 lakhs.

(c) *Kunnathur Taluk.*—During the Second half of the khariff season there was heavy rains which resulted a heavy flood at almost all over the Taluk. The crops like paddy, tapioca, banana, Coconut, Arecanut etc. had been destroyed considerably. The extent of damage was estimated to Rs. 40 lakhs.

(d) *Kottarakara Taluk.*—During the khariff season there was heavy rain and consequent flood. This had caused considerable damage to the crops which was estimated to Rs. 4.6 lakhs.

(e) *Pathanapuram Taluk.*—During Khariff season there was heavy rain and consequent flood which has caused considerable damage to paddy crop worth Rs. 1.16 lakhs.

(f) *Pathanamthitta Taluk.*—There was heavy rainfall and consequent flood during khariff season. The loss to various crops has been estimated to Rs. 71 lakhs. Weather and crop conditions were reported to be satisfactory during Rabi season.

### (3) ALLEPPEY DISTRICT

(a) *Karthikapally Taluk.*—Heavy rainfall during khariff season had caused about 18% loss to the Autumn crop of paddy in this Taluk. During rabbi season both weather & crop condition was satisfactory.

(b) *Mavelikara Taluk.*—Heavy rain and consequent flood caused slight damage to the crops during Rabi season. As a whole the crop conditions were reported to be Satisfactory in the Taluk during khariff season.

(c) *Thiruvalla Taluk.*—South west monsoon was very active from May last whereas North west monsoon started from October itself in the Taluk. Crop conditions were also reported to be normal in both khariff and rabi seasons.

(d) *Kuttanad Taluk.*—About 600 acres of paddy lands were affected adversely due to flood during khariff season whereas the crop condition were satisfactory during Rabi season in this taluk.

(e) *Ambalapuzha Taluk.*—There was heavy rain during khariff and rabi seasons and consequent flood caused damage to paddy cultivation to the extent of 2,000 acres in the taluk. The conditions of other crops were satisfactory.

(f) *Shertallai Taluk.*—Rainfall during khariff and rabi season was normal in the taluk. But due to drought and pest attack 20% reduction of paddy production was also reported during rabi season from this Taluk.

## (4) IDUKKI DISTRICT

(a) *Peermade Taluk.*—The most important crops in this taluk are tea, rubber, pepper, coffee and cardamom. Autumn crop of paddy is not cultivated in this taluk. Winter crop of paddy was comparatively better during this year due to heavy rain during August-September 1978.

(b) *Devikulam Taluk.*—There was comparatively good and moderate rainfall during Autumn season. The climate was favourable for all seasonal crops especially for paddy and perennial crops such as cardamom, Tea and pepper during winter seasons. After December 1978 there was rain only in May 1979. The prolonged drought affected the yield of paddy by 15%. Arecanut 20%, coconut 20% seasonal crops 20% and tea 10%. at the same time sugarcane and lemongrass gained 20% production.

(c) *Udumbanchola Taluk.*—Throughout the year under report climate was almost good for crops. But during winter season heavy rainfall and flood affected the paddy about 40 acres and the loss estimated for the same was Rs. 500 and an area of 110 acres of Tapioca (Summer) was also affected adversely, the loss estimated being about Rs. 1000.

(d) *Thodupuzha Taluk.*—There was heavy rain and consequent flood during winter season causing considerable damages to various crops like paddy, tapioca, coconut, rubber, pepper, Plantain and other minor crops, the total estimated loss being Rs. 12,500. During summer season certain areas were affected by cyclonic and the total estimated loss was Rs. 8,500. No accountable loss was reported to any crop due to drought in this taluk during this year.

## (5) KOTTAYAM DISTRICT

(a) *Kottayam Taluk.*—During khariff season rainfall was very heavy whereas it was inadequate during Rabi season. Condition of paddy crop in both seasons were normal. But damages were caused to Paddy, Rubber, coconut, arecanut, pepper, ginger, tubers, plantain and banana crops, due to storm, pest attack etc. The estimated loss being Rs. 3.25 lakhs.

(b) *Vaikom Taluk.*—There was heavy rainfall resulting in flood in this taluk during Khariff season. In Rabi season rainfall was inadequate. Paddy crop damage was reported to be Rs. 25 lakhs during khariff season whereas condition of rabi crops was reported to be normal.

(c) *Changanacherry Taluk.*—Condition of khariff crops was not satisfactory in this taluk during khariff season. Heavy rains caused flood and damage to Paddy crop, the loss being Rs. 8 lakhs.

(d) *Meenachil Taluk.*—Different parts of the taluk were badly affected by heavy rains and consequent flood during khariff season. The loss of crops estimated is Rs. one lakh.

## (6) ERNAKULAM DISTRICT

(a) *Kanayannur Taluk.*—The rainfall condition in both khariff and Rabi season was moderate. The condition of crops was also good. There was no loss of crop due to heavy rains, draught or pest attack in this taluk.

(b) *Parur Taluk.*—Rainfall during Khariff season was too heavy compared to previous year. Rainfall spread over throughout the Khariff season. Occasional rainfall occurred during Rabi season in 1978-79 in this taluk. Damage occurred in some parts of the taluk for autumn paddy. The loss as approximately estimated worth Rs. 8,000.

(c) *Muvattupuzha Taluk.*—During Khariff season even though the rain was little abnormal the yield of autumn paddy was not seriously affected. The rainfall was higher than before during Rabi season. Due to heavy rain and flood the transplanted plants of low area were destroyed in a considerable area. The loss affected by this was about worth Rs. 80,000.

(d) *Kothamangalam Taluk.*—The weather condition prevailed in this taluk was not favourable to vegetation Autumn Paddy. In July, August the rain was heavy causing considerable damage to paddy as it was the flowering period. Nearly 40% of paddy crops had been lost and the loss estimated to Rs. 5 lakhs approximately.

(e) *Kunnathunad Taluk.*—The rainfall condition during Rabi and Khariff seasons was not normal. The loss occurred due to flood and drought was approximately estimated to Rs. 1 lakh in this taluk.

(f) *Cochin Taluk.*—During Khariff season the rainfall was moderate and beneficial. No considerable loss was affected for Khariff crop in this taluk. There is no crop in Rabi season in this taluk.

#### (7) TRICHUR DISTRICT

The climatic condition was not very much favourable for the crop in this district. In Mukundapuram taluk the southwest monsoon was late during the year. In Trichur and Talappally Taluks the rainfall in Khariff season was normal, whereas Chavakkad and Kodungallur taluks the monsoon was very late.

The rainfall in Rabi season was normal in Trichur Talapally and Kodungallur taluks. In chavakkad and Mukundapuram taluks it was more or less normal for Mundakan crops of Paddy. But in summer season untimely rainfall caused severe damage of cultivation in all the taluks especially in Chavakkad Taluk. No loss of crops occurred in Trichur Taluk. Hence the quantitative estimate of loss was negligible. But in Chavakkad and Mukundapuram taluks Autumn Paddy was damaged due to draught and the quantity of loss was estimated as Rs. 1,23,000 and Rs. 15,000 respectively. In Talappally taluk, heavy rainfall caused slight damage for the standing seasonal crops like paddy and perennial crops like Pepper. The approximate quantitative estimate of loss was Rs. 1,000 with respect to Kodungalloor Taluk, the crop was damaged on account of the sudden cutburst of monsoon at the beginning of the season and the money value of damage was estimated as Rs. 75,000.

During Rabi seasons untimely rain caused the damage to summer Paddy in Chavakkad Taluk and the loss of their damage was estimated as Rs. 2,85,000. Similarly in Mukundapuram Taluk there was a loss of

Rs. 20,000 due to the untimely rain in summer season. In Talappally Taluk the quantitative loss of damage for summer crop was estimated as Rs. 8,000 approximately. Before harvesting, drought affected slightly due to the lack of sufficient rainfall with respect to Kodungallur Taluk and the loss of this damage was negligible.

### (8) PALGHAT DISTRICT

In general in most of the Taluks uniform rain was received. But notable damage occurred in Attappady in Mannarghat Taluk due to heavy rain and in Ottappalam due to flood in Bharathapuzha.

(a) *Alathur Taluk.*—Rainfall for both Khariff and Rabi are comparatively less than that of the previous year. The crop condition were good during both the season giving a fair yield for the seasonal, annual and perennial crops. No crop damage was reported from any part of the taluk.

(b) *Chittur Taluk.*—Though the southwest monsoon was little late for the Khariff season, sufficient rain was received throughout the taluk. Dry weather affected at the middle of the Rabi season. Due to availability irrigation water the crop condition were fair for both seasons. No crop damage was reported in the taluk.

(c) *Palghat Taluk.*—Average rainfall was reported for both season though dry weather was presented at the middle of the Rabi season. The crop condition was normal giving a normal yield. No crop damage was reported in the taluk.

(d) *Mannarghat Taluk.*—Heavy rainfall was reported during the Khariff season and it adversely affected the seasonal crops of paddy, Ragi Chulam, Chama, Horsegram etc., This affected about 3122 acres of Attapady area, the estimated loss being Rs. 5 lakhs. For the rabi season, the rainfall condition and crop condition were normal.

(e) *Ottapalam Taluk.*—Normal rainfall was recorded in both the seasons. The crop conditions for Khariff was fair and for Rabi was normal. Due to sudden rising of water level in Bharathapuzha, flood affected the area resulting damage to paddy crops with resultant estimated loss amount of Rs. 1,25,000.

### (9) MALAPPURAM DISTRICT

(a) *Ernad Taluk.*—Heavy rain in the beginning of Khariff season was not favourable for the healthy growth of crops especially Paddy Banana, Tapioca etc. The yield was not so good as expected. The Rabi crops mainly depended upon natural irrigation facilities. Due to flood in khariff season nearly 15% of the cultivated area had been partially damaged. The crop damage estimated to the value of about 2 lakhs.

(b) *Tirur Taluk.*—Regarding the condition of Khariff and Rabi crops there was no notable variation in the extent and yield of any crop during the two seasons. Nearly 275 acres of paddy were damaged during November 1978 due to flood. There was a loss of Rs. 1.25 lakhs as a result of flood and cyclone.

(c) *Perinthalmanna Taluk*.—Rainfall was normal during Khariff crop season. Weather conditions were favourable to all Rabi crops. No considerable loss occurred to any crop raised during the year under report.

(d) *Ponnani Taluk*.—Heavy rainfall in July and September months and consequent flood affected the Autumn crops badly. In certain parts of Taluk slight damages caused to Coconut and Banana crop due to heavy rain and wind. Totally this was estimated to be 300 hectares of the cultivated area, quantitative estimate of the loss being Rs. 2 lakhs approximately.

#### (10) KOZHIKODE DISTRICT

(a) *Quilandy Taluk*.—Due to heavy rain the condition of Khariff crops was not satisfactory, whereas the condition of Rabi crop was satisfactory. 120 acres of paddy lands were adversely affected in different parts of the Taluk quantitative estimate of the loss being Rs. 14000.

(b) *Badagara Taluk*.—During Khariff season heavy rain affected in almost all the Villages in the taluk while rainfall condition was poor in Rabi season. The production of crop was slightly affected by heavy rain during Khariff season. No case of attack of pest was reported during Rabi season weather condition was better to all crops some damage occurred to paddy cultivation due to flood the loss was reported to be Rs. 6000.

(c) *Kozhikode Taluk*.—Rain fall during the early period of Khariff season was normal, but at the middle of the season there was heavy rainfall. Khariff crops like Autumn paddy was comparatively normal so also other crops like pepper Arecanut etc. As regards Rabi crops there was heavy rain during the early period and due to flood there was heavy loss to paddy in the early stage. The loss was estimated to be Rs. 1 lakh with regard to pepper and Arecanut 60% and 40% decrease in production were respectively noticed when compared to previous year due to heavy rain and flood.

(d) *South Wynad Taluk*.—Eventhough there was heavy rain during Khariff season the crops were not seriously damaged. During Rabi season the condition of seasonal crops was normal. No loss of crops was reported during the season from this taluk.

#### (11) CANNANORE DISTRICT

There was heavy rain during the month of July and August in all the Taluk of the district. Dry weather prevailed during the month of January, February, March and April 1979. The rainfall during the remaining month were reported to be mod rate in all the taluks. The yield of paddy in the district during Khariff season was reported to be normal except in North Wynad taluk when heavy rain in October and November 1978 resulted damages of paddy cultivation. The yield of coconut, areacunt, tapioca and coffee was also reported to be normal. During Rabi season the area under paddy cultivation during summer was very low due to non availability of rain in time and other irrigation facilities. The yield of pulses and vegetables during the year under report was reported to be good in Kasaragode, Hsdurg and Taliparamba taluks. The yield of coconut,

arecanut and tapioca was normal heavy rain in October and November in NorthWynad taluk had affected the early stages of winter paddy. About 10% of the total area of paddy in this taluk has been damaged. The quantitative estimate of the loss of paddy was about Rs. 45,000. No other serious damages was caused to other crops in this taluk. The loss of crops in other taluks during the year was negligible.

### 10. Production of important crops

The production of important crops in the state is given in table D of the summary of tables. District-wise production estimates have been furnished in table 4.1 of the detailed tables. The change in production of important crops are indicated below.

(1) *Paddy*.—The total production of rice in the State is 1272743 tonnes as against 1294635 tonnes in the previous year. Palghat district continues to lead in respect of production of rice this year also. The district-wise details of production of rice are furnished in the following table.

TABLE XVII

District	Production of Rice (Tonnes)	
	1977-78	1978-79
Trivandrum	46765	50449
Quilon	71796	81499
Alleppey	160018	135561
Kottayam	69060	65663
Idukki	22813	15784
Ernakulam	141437	150414
Trichur	144157	153033
Palghat	361048	349326
Malappuram	114551	112670
Kozhikode	58783	63443
Canara ore	104192	94891
Total	1294635	1272743

The season-wise production of rice for the Two years are as follows.

TABLE XVIII

Season	Rice production Tonnes	
	1977-78	1978-79
Autumn	551792	544171
Winter	559190	530004
Summer	183653	198568
Total	1294635	1272743



(2) *Pulses*.—The production of pulses was 15889 tonnes during the year under report compared to 16091 in the previous year.

(3) *Sugar cane*.—The production of gur is estimated to be 48870 tonnes during 1978-79.

(4) *Blackpepper*.—During the year under report production of black pepper was estimated as 26331 tonnes.

(5) *Dry Ginger*.—The quantity of dry ginger produced during the year is 32910 tonnes as against 32107 tonnes in the previous year.

(6) *Turmeric (cured)*.—During 1978-79-7045 tonnes of turmeric was produced. The production during 1977-78 was 3547 tonnes.

(7) *Cardamom (Processed)*.—The quantity of Cardamom produced is estimated as 2900 tonnes. The major cardamom producing District is Idikki.

(8) *Betel nuts*.—During the year under report arecanut production is estimated as 10919 million nuts. This was 10548 million nuts during the previous year.

(9) *Banana*.—The production of banana in the State during 1978-79 is estimated as 171493 tonnes. The increase in production during the year over the previous year was 40814 tonnes.

(10) *Other Plantain*.—The production of plantain also has increased from 141349 tonnes in 1977-78 to 151430 tonnes in 1978-79.

(11) *Cashewnut*.—The cashewnut production during 1977-78 is estimated as 84190 tonnes as compared to the previous year which was 84747 tonnes. About 51.12 per cent of the cashewnut was produced in Cannanore District.

(12) *Tapioca*.—During the year under review 4044046 tonnes of Tapioca has been produced in the State. A slight decrease in production was noticed when compared to the previous year. The production was estimated using the results of the crop cutting survey conducted by the Department. This districtwise yield rates for 1977-78 and 1978-79 are furnished below.

TABLE XIX

District	Yield rate of Tapioca (Tonnes per hectare)	
	1977-78	1978-79
(1)	(2)	(3)
Trivandrum	14.05	14.58
Quilon	12.65	14.50
Alleppey	14.90	15.22
Kottayam	16.48	16.62

(1)	(2)	(3)
Idukki	19.25	17.65
Ernakulam	17.68	16.35
Trichur	18.32	13.02
Palghat	14.58	14.90
Malappuram	11.85	12.45
Kozhikode	14.38	10.72
Cannanore	16.25	15.82
State	14.46	14.79

The major tapioca producing districts are Trivandrum and Quilon.

(13) *Ground nut*.—The production of ground nut for the year is 13659 tonnes as against 13288 tonnes during 1977-78

(14) *Sesamum*.—A slight increase in the production of Sesamum is noticed during 1978-79 compared to the previous year. Total production was 4713 tonnes during 1978-79 as against 4431 tonnes in 1977-78.

(15) *Coconut*.—The quantity of Coconut produced during 1978-79 is estimated as 3211 million nuts. The estimate for the year 1977-78 was 3053 million nuts.

(16) *Cotton*.—The cotton produced during 1978-79 was estimated as 7241 bales of 170 kg.

(17) *Tobacco*.—This crop was cultivated only in Cannanore Districts. The total production during the year was 768 tonnes.

(18) *Tea*.—The estimated production of tea for the year was 47364 tonnes as against 51983 tonnes in the previous year.

(19) *Coffee*.—The production of Coffee has increased from 27645 tonne during 1977-78 to 28017 tonnes during 1978-79.

(20) *Rubber*.—The quantity of rubber produced during the year is 123677 tonnes. This shows a decrease of 12330 tonnes over the previous year estimate of 135907 tonnes.

### 11. Farm Price of Certain Commodities

The average farm price of certain commodities are given in table 'F' of the summary tables and 5.1 of detailed tables.

### 12. Agricultural wages

District-wise and class-wise details of agricultural wages are given in table 6.1

### 13. Live stock poultry and Agricultural implements

The details relating to these items have been furnished in table G of the Summary table and 7.1 of detailed tables.

### 14. Sowing harvesting and peak marketing periods

The information on these topics has been furnished in table H of the summary tables.

## PART II

### SUMMARY TABLES

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TABLE A  
Classification of Area (Hectares)

	Head of Classification	Area	Percentage
1	Total area by village papers	3885497	100.00
2	Forests	1081509	27.83
3	Land put to non-agrl. uses	260443	6.70
4	Barren and uncultivable lands	74613	1.92
5	Permanent pastures and grazing lands	6245	0.16
6	Land under miscellaneous tree crops	66374	1.71
7	Cultivable waste lands	123341	3.17
8	Current fallow	42246	1.09
9	Other fallow	26598	0.68
10	Net area sown	2204128	56.73
11	Total cropped area	2885710	74.27
12	Area sown more than once	681582	17.54

TABLE B  
Source of Irrigation Water Supply and net area in (Hectares)  
Irrigated in 1978-1979.

	Net area irrigated by	Area (He)
1	Government canals	97827
2	Private canals	5335
3	Government tanks and wells	6546
4	Private tanks and wells	51093
5	Minor and lift irrigation (Govt. Scheme)	39358
6	Other Sources	29364
7	Total	229523
8	Percentage of area irrigated to net area sown:	10.41

TABLE C  
Area under crops in Kerala (Hectares) 1978-79.

	Name of crops	Area in (hectares)
(1)	(2)	(3)
Cereals and millets	(1) Paddy	799238
	(2) Jowar	1911
	(3) Ragi	1332
	(4) Other cereals and millets	1817
	(5) Total cereals and millets	804298

(1)	(2)	(3)
Pulses	(6) Tur	—
	(7) Other pulses	—
	(8) Total pulses including tur	35567
Sugar crops	(9) Sugarcane	8537
	(10) Palmyrah	13710
	(11) Total sugar crops	22247
Spices and Condiments	(12) Pepper	106743
	(13) Chillies	791
	(14) Ginger	12713
	(15) Turmeric	3811
	(16) Cardamom	55180
	(17) Arecanut (Betel nut)	62317
	(18) Other condiments and spices	5093
(19) Total condiments and spices	246648	
Fresh fruits	(20) Mango	61498
	(21) Jack	59899
	(22) Banana	13518
	(23) Other plantains	39824
	(24) Pineapple	5938
Dried fruits	(25) Other fruits	24075
	(26) Cashew	136552
	(27) Total fruits	341304
	(28) Tapioca	243483
Vegetables	(29) Sweet Potatoes	5431
	(30) Tubers	35888
	(31) Other vegetables	28239
	(32) Total Vegetables	343041
	(33) Other food crops (Tamarind)	10940
	(34) Total food crops	180405
Oil seeds	(35) Coconut	660628
	(36) Sesamum	17558
	(37) Ground nut	13938
	(38) Other oil seeds	2223
	(39) Total oil seeds	694347
Fibre	(40) Cotton	5354
	(41) Tobacco	404
Drugs	(42) Tea	36090
	(43) Coffee	53345

(1)	(2)	(3)
Narcotics and	Cocoa	12769
Plantain crops	(44) Rubber	214415
	(45) Total	316823
Other non	(46) Fodder grass	1956
Food crops	(47) Green manure crops	10766
	(48) Lemongrass	5954
	(49) Betel leaves	1231
	(50) Other crops	45034
	(51) Total	61941
	(52) Total non food crops	1081665
	(53) Total area under all crops	2885710
	(54) Area sown more than once	681582
	(55) Net area sown	2204128

TABLE D

## Production of Important Crops in Kerala 1978-79.

Name of crop		Unit in	Quantity
1	Rice	Tonnes	1272743
2	Jowar	"	859
3	Ragi	"	1025
4	Tur	"	731
5	Other pulses	"	15889
6	Sugar cane (Gur)	"	48870
7	Pepper (Black)	"	26331
8	Chillies (Dry)	"	719
9	Ginger (Dry)	"	32910
10	Turmeric (Cured)	"	7045
11	Cardamom (Processed)	"	2900
12	Arecanut (Betel nuts)	Million nuts	10919
13	Banana	Tonnes	171493
14	Other plantain	"	488178
15	Cashew nuts	"	84190
16	Tapioca (Raw)	"	4044046
17	Sweet Potatoes	"	35356
18	Ground nut	"	13659
19	Sesamum	"	4713
20	Coconut	Million nuts	3211
21	Cotton	Bales of 170 kg.	7241
22	Tobacco	Tonnes	768
23	Tea	"	47365
24	Coffee	"	28017
25	Rubber	"	123677

TABLE E

Average yield per hectare of Certain crops for the year 1978-79.

Sl. No.	Name of crop	Unit	1977-78	1978-79
1	Paddy	Kg./hect.	2344	2423
2	Jowar	"	448	450
3	Ragi	"	799	580
4	Sugarcane (Gur)	"	5699	5724
5	Pepper (Black)	"	199	247
6	Ginger (Dry)	"	2534	2589
7	Turmeric (Cured)	"	965	1849
8	Cardamom (processed)	"	56	53
9	Arecanut	Nuts/hect.	168965	175217
10	Banana	Kg/hect	12590	12686
11	Other plantains	"	12198	12258
12	Cashewnuts	"	667	617
13	Tapioca (Raw)	"	14457	14787
14	Groundnut	"	1050	980
15	Sesamum	"	252	268
16	Coconut	Nuts/hect	4533	4861
17	Cotton	Kg/hect	237	230
18	Tea	"	1439	1312
19	Coffee	"	525	525
20	Rubber	"	640	577

TABLE F

Average farm price of Certain Commodities on 1978-79

Sl. No.	Name of crop	Unit	Average farm price (Rs.) (weighted average)
1	Paddy	Rs. per Qtl.	125.75
2	Coconut (with husk)	Rs. per 1000 Nos.	1020.95
3	Arecanut (Ripe)	"	50.85
4	Tapioca (Raw)	Rs. per qtl.	34.45
5	Cashew nut	Rs. per qtl.	407.12
6	Banana	Rs. per 1000 Nos.	328.62
7	Pepper (Black)	Rs. per qtl.	1508.16
8	Ginger	Rs. per qtl.	671.42
9	Sugar cane	Rs. per M. T.	127.47

TABLE G

## Number of livestock, poultry and agricultural machinery

Sl. No.	(1)	(2)	Census (1972) (3)	Census (1977) (4)	(5)
1	Cattle	Male over 3 years.	(a) Breeding	4800	3462
			(b) Working	371972	353672
			(c) Others	14822	13980
			Total	391594	371114
		Female over 3 years.	(a) Breeding		
			(1) in milk	606192	705040
			(2) Dry	578827	585474
			(3) Not calved	101849	74794
			(b) Working	7646	2569
			(c) Others	5657	3103
			Total	1300171	1370980
		Young stock		1164555	1263965
		Total cattle		2856320	3006059
2	Buffaloes	Males over 3 years	(a) Breeding	2185	1777
			(b) Working	211467	210199
			(c) Others	12077	6798
			Total	225729	218774
		Females over 3 years	(a) Breeding		
			(1) In milk	83188	86693
			(2) Dry	53671	53646
			(3) Not calved	10495	9013
			(b) Working	6066	5039
			(c) Others	2360	1196
		Total		155780	157592
			Young Stock	90238	78024
			Total Buffaloes	471747	454400



(1)	(2)	(3)	(4)	(5)
3	Goat	(a) One year and above	839053	956695
		(b) Below one year	628204	726602
		Total	1467657	1683297
4	Sheep	(a) One year and above	6991	—
		(b) Below one year	3330	—
		Total	10321	2546
5	Horse and ponies	(a) 3 years & above	333	—
		(b) Below 3 years	118	—
		Total	451	90
6	Mules		14	Nil
7	Donkeys		861	266
8	Camels		11	—
9	Pigs		129087	172375
		Total live stock	4936469	5319033
10	Poultry	(a) Fowls	11844548	12956186
		(b) Ducks	301941	429569
		(c) Others	965	3095
11	Ploughs	(a) Wooden	393714	316975
		(b) Iron	35103	69191
12	Carts		16245	20525
13	Sugarcane	Crushes		
		(a) Power	96	459
		(b) Bullocks	801	863
14	Oil Engines		186469	28759
15	Electric pumps		9983	25973
16	Tractors		2752	783

## Sowing, harvesting and Peak Marketing Seasons of Principal Crops in Kerala State 1978-79

Crop Calendar—State

Sl. No.	Name of crop	Season	Sowing	Period of flowering	Harvesting	Peak marketing
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Rice	Autumn Winter Summer	April-July August-November October-December January-March	July-October October-January January-March March-May	August-October November-January March-May April-June	September-November December-March March-June April-July
2	Ragi	I crop II crop III crop	April-July September-October May-June December	August October-November September-October January-February	September-November December-January October-November February	September-November December-January October-November
3	Small Millets	Autumn Summer	April-July January-February	July-November March	September-November April	December-January April
4	Red gram	Autumn Winter Summer	May-August August-November February-March	June-September September-November May	August-October October-January May	August-October December-January June
5	Horse gram	Autumn Winter Summer	February-April September-November December-February	March-April October-November January-April	April-June November-January April	May-June November-February April
6	Green Gram	Autumn Winter Summer	June-August October January	August-September November February-April	August-September November-December March-April	September-December November-December March-April
7	Black Gram	Winter Summer	March-June September-October	July-August October-November	June-September November-December	September-October December-January
8	Other pulses	Autumn Winter Summer	April-July September-December December-March	July-August October-December January-April	July-October November-February February-June	July-November December-March April

(1)	(2)	(3)	(4)	(5)	(6)	(7)
9	Sugar Cane	Autumn Winter Summer	October-February November-March June-October	.. .. September-October	October-December December-February October-January	November-December January-February January
10	Ginger	Autumn Winter	March-July March-June	.. ..	November-February December-February	December-February December-March
11	Pepper	Winter Summer	June-August July	July-October July-September	November-February January-April	November-March March-May
12	Cotton	Winter	June-October	November-December	December-March	February-March
13	Seasamum	Autumn Winter Summer	April-August August-October December-February	July-September October-December February-April	August-October December-April March-May	July-October December-February March-May
14	Sweetpotatoes	Autumn Winter Summer	April-July October-November December-March	.. .. ..	September-November January-February March-June	November-February February-March April-June
15	Turneric	..	April-July	..	November-February	November-March
16	Lemongrass	..	May-June	..	July-November January-February April-May	July-November January-February April-May
17	Tapioca	Autumn Winter Summer	July-October March-May June-October October-November	.. .. .. ..	July-August November-March March-July April-May	July-September December-February March-July ..
18	Mango	..	..	December	April-May	April-May
19	Tender Arccanut	..	..	June	September	September
20	Tubers	Autumn Winter	February-March March-April	.. ..	July-September November-January	August-September December-January
21	Banana	Autumn Winter	August-September December-January	April-May August-October	July-August November-January	July-August December-January
22	Tobacco	Winter	November-December	..	March-April	May-June

## PART III

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TABLE 1.1

## Normal Rain fall in Kerala (in m.m.)

<i>Sl. No.</i>	<i>District</i>	<i>July</i>	<i>August</i>	<i>September</i>	<i>October</i>	<i>November</i>	<i>December</i>	<i>January</i>	<i>February</i>	<i>March</i>	<i>April</i>	<i>May</i>	<i>June</i>	<i>Total</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	Trivandrum	257.4	204.5	168.9	280.2	210.2	70.1	21.2	18.0	48.0	128.1	219.9	391.1	2001.6
2	Quilon	449.6	318.1	226.1	344.9	242.9	68.4	24.1	32.1	83.6	166.3	260.3	547.4	2760.2
3	Alleppey	552.3	370.3	272.7	330.2	219.4	64.1	25.9	29.3	59.0	133.5	291.5	663.8	3012.0
4	Kottayam	657.7	447.5	296.5	383.8	244.7	73.6	28.8	30.3	85.4	176.9	324.1	713.3	3462.6
5	Idukki	655.1	432.9	262.7	304.4	195.8	68.8	31.1	21.1	44.6	111.7	200.9	556.7	2898.9
6	Ernakulam	785.3	518.0	293.9	359.7	212.6	54.2	16.8	22.4	51.6	129.5	308.4	796.1	3548.5
7	Trichur	761.4	458.6	250.3	307.5	158.3	30.3	9.3	8.8	28.6	86.6	274.3	803.4	3177.4
8	Falghat	649.9	363.0	169.5	257.2	140.9	29.7	9.8	9.3	27.0	79.6	158.4	503.4	2397.7
9	Malappuram	787.0	405.0	198.8	290.0	163.8	30.9	6.7	6.5	19.3	78.7	211.0	702.4	2900.7
10	Kozhikode	1117.4	599.2	262.4	290.2	163.7	34.2	10.4	7.6	20.0	92.4	254.0	944.5	3796.0
11	Cannanore	1063.5	584.8	239.4	218.0	106.0	22.8	5.3	4.8	11.1	58.6	200.6	923.0	2437.9
12	State	686.4	422.6	242.0	306.9	190.9	51.2	18.5	19.3	46.4	115.6	245.0	672.8	3017.6

TABLE 1.2

## Average Monthly Rainfall (m.m.) Statement for 1978-79

District	July	August	September	October	November	December	January	February	March	April	May	June	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Trivandrum	342.5	163.3	53.8	92.4	643.1	42.9	1.0	72.5	35.7	43.7	88.8	539.8	2119.5
Quilon	454.8	339.9	177.7	207.8	634.4	18.7	5.7	67.0	14.3	104.8	144.6	680.6	2850.3
Alleppey	619.4	409.8	184.4	205.3	463.3	51.0	3.8	6.6	5.9	37.2	126.5	633.9	2747.1
Kottayam	611.0	391.1	171.8	166.3	293.8	34.1	1.0	3.7	3.1	54.6	92.3	775.3	2608.1
Idukki	544.0	665.7	175.7	207.9	392.5	101.0	..	34.7	16.3	42.3	208.3	420.6	2809.0
Ernakulam	691.3	496.3	208.2	345.3	356.4	55.5	9.8	31.8	11.4	45.7	103.3	828.0	3183.0
Trichur	901.1	703.3	90.0	168.0	341.8	63.5	..	16.4	11.6	55.8	137.7	813.7	3302.9
Palghat	542.5	408.7	40.9	151.7	268.0	29.2	..	35.0	1.8	47.5	96.5	477.2	2099.0
Malappuram	691.7	548.9	209.0	85.0	513.8	5.0	..	21.0	..	88.0	133.9	678.8	2975.1
Kozhikode	1164.1	634.9	215.3	128.8	372.2	58.1	9.2	2.9	4.4	55.8	236.6	757.5	3639.8
Cannanore	1035.5	687.7	129.0	54.0	128.8	51.7	2.6	10.3	1.1	26.4	54.9	594.9	2776.9
State	690.7	495.4	150.5	164.8	400.7	46.4	3.0	28.4	9.6	54.7	129.4	654.6	3085.4

TABLE 2.1  
Total Area and classification of area in each District 1978-79 (in hectares)

District	Total geographical area according to village papers	Forest	Land put to non-agricultural uses	Barren and uncultivable land	Permanent pastures and grazing lands	Land under miscellaneous tree crops	Cultivable waste land	Fallow other than current fallow	Current fallow	Net sown area once	Area sown more than once	Total cropped area
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Trivandrum	218600	49861	16656	1720	45	241	2272	1646	1261	144898	80611	225509
Quilon	474290	236048	24631	2618	39	358	1491	1274	1917	205914	101302	307216
Alleppey	182270	518	30869	667	20	221	2434	1076	3817	142648	66391	209039
Kottayam	219550	8141	17537	1518	128	370	1109	2327	3665	184755	50517	235272
Idukki	515048	260993	13984	17346	2618	14638	42582	1772	1287	160328	3685	164013
Ernakulam	235319	8123	29823	1693	213	1689	5497	2232	3714	182335	76311	258646
Trichur	299390	103619	21146	2269	225	1416	5141	3080	4266	158228	79332	237560
Palghat	438980	136257	32685	11395	527	8387	23115	4839	6429	215346	110507	325853
Malappuram	363230	103417	16867	7507	450	2508	12976	3987	7883	207635	48761	256396
Kozhikode	371150	90876	20752	3783	299	19584	5024	1794	2786	226252	54766	281018
Cannanore	567670	83655	35493	24097	1681	16962	21700	3071	5221	375789	9399	385188
State	3885497	1081509	260443	74613	6245	66374	123341	26598	42246	2204128	681582	2985710



TABLE 2.2

## Classification of area as percentage of total area according to village papers (1978-79)

District	Geographical total area according to village papers	Forest	Land put to non agricultural use	Barren and uncultivable land	Permanent pastures and other grazing land	Land under miscellaneous and collanous tree crops	Cultivable waste land	Fallow other than current fallow	Current fallow	Net sown area more than once	Total cropped area	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Trivandrum	100	22.81	7.61	0.79	0.02	0.11	1.04	0.75	0.58	66.28	36.87	103.77
Quilon	100	49.77	5.19	0.55	0.01	0.08	0.31	0.27	0.40	43.42	210.36	64.77
Alleppey	100	0.28	16.94	0.37	0.01	0.12	1.34	0.59	2.09	78.26	36.42	114.69
Kottayam	100	3.71	7.99	0.07	0.06	0.17	0.51	1.06	1.67	84.15	23.01	107.16
Iduki	100	50.67	2.72	3.37	0.51	2.84	8.27	0.25	0.25	31.12	0.72	31.84
Ernakulam	100	3.46	12.67	0.72	0.09	0.72	2.34	0.95	1.58	77.48	32.43	109.91
Trichur	100	34.61	7.06	0.76	0.08	0.47	1.72	1.03	1.42	52.85	26.50	79.35
Palghat	100	31.04	7.45	2.60	0.12	1.91	5.27	1.10	1.46	49.06	25.17	74.23
Malappuram	100	28.46	4.64	2.07	0.12	0.69	3.57	1.10	2.17	57.16	13.42	70.59
Kozhikode	100	24.48	5.59	1.02	0.08	5.28	1.35	0.48	0.75	60.96	14.76	75.72
Cannanore	100	14.74	6.25	0.42	0.30	2.99	3.82	0.54	0.92	66.20	1.66	67.85
State	100	27.83	6.70	1.92	0.16	1.71	3.17	0.68	1.09	56.73	17.54	74.27

TABLE 3-1  
Area under crops in Each District of Kerala (1978-79) (area in hectares)

District	Food crops										Total food grains		
	Paddy					Other cereals						Pulses	
	Autumn	Winter	Summer	Total	Jowar	Ragi	Other cereals and millets	Total cereals and millets	Tur	Other pulses		Total pulses	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
Trivandrum	15535	16051	1494	33080	..	19	..	33099	..	..	3496	30595	
Quilon	24611	25364	840	50815	..	5	..	50820	..	..	2820	53640	
Alleppey	29071	16854	29576	75501	..	6	..	75507	..	..	814	76321	
Kottayam	13939	13304	10206	37449	..	..	..	37449	..	..	1821	39270	
Idukki	3162	5396	274	8832	25	327	250	9434	..	..	1826	11260	
Ernakulam	41789	38928	19448	100165	5	3	200	100373	..	..	1513	101886	
Trichur	42441	51417	21929	115787	..	43	60	115890	..	..	4406	120296	
Palghat	87718	83219	3476	174413	1839	879	1147	178278	3020	6438	9458	187736	
Malappuram	39436	36382	5644	81462	..	9	35	81506	..	..	2718	84224	
Kozhikode	10718	30776	7415	48909	..	28	17	48954	..	..	1393	50347	
Cannanore	38407	28036	6382	72825	42	13	108	72988	..	..	5302	78290	
State	346827	345727	106684	799238	1911	1332	1817	804298	..	..	35567	839865	

District	Condiments and spices											Total
	Sugar crops					Condiments and spices					Total	
	Sugar cane	Others (Palm- yrah)	Total sugar crops	Pepper	Chillies	Ginger	Turmeric	Cardamom	Betal nuts	Other condiments and spices		
(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)		
Trivandrum	38	665	703	6021	..	127	15	176	3258	148	9745	
Quilon	790	63	853	10550	..	1153	106	160	5479	325	17773	
Alleppey	3569	30	3599	4614	..	261	37	..	3050	195	8157	
Kottayam	178	601	779	13620	..	3331	1043	..	2629	910	21533	
Idukki	1747	242	1989	12026	..	870	196	45997	1556	161	60806	
Ernakulam	183	348	531	7409	..	2496	1062	..	6784	1605	19356	
Trichur	2	1114	1116	3527	..	197	126	7	7531	344	11732	
Palghat	1945	8157	10102	1352	71	493	168	3664	2272	305	8325	
Malappuram	17	1491	1508	3652	87	527	81	193	8182	50	12772	
Kozhikode	6	538	544	91160	74	2281	503	3598	6500	217	32333	
Cannanore	62	461	523	24812	559	977	474	1395	15076	833	44116	
State	8537	13710	22247	106743	791	12713	3811	55180	62317	5093	246648	

District	Fresh fruits and dried fruits										Vegetables		
	Mango (25)	Jack (26)	Banana (27)	Other plantain (28)	Cashew (29)	Other fruit trees (30)	Pineapple (31)	Total fruits (32)	Tapioca (33)	Sweet potatoes (34)	Tubers (35)		
Trivandrum	7754	7905	562	5439	6130	1873	534	30197	55796	117	1753		
Quilon	6305	6998	1217	3714	9357	1651	884	30126	68150	15	6972		
Alleppey	4550	4172	853	3555	3343	1964	345	18782	20648	73	5578		
Kottayam	4102	4554	1701	4270	1183	2116	572	18498	26957	48	3981		
Idukki	2398	1999	176	3287	1023	2911	340	12134	9476	70	1920		
Ernakulam	5305	4676	1833	4088	4317	2125	605	22949	14015	59	3227		
Trichur	5406	4154	1445	3769	7363	1853	490	24480	8681	111	2282		
Palghat	4723	4068	879	2429	12790	2806	154	27849	15659	1988	2903		
Malappuram	5896	4755	1854	2396	22221	1647	223	36992	21804	1767	2396		
Kozhikode	7682	8796	1077	3064	5222	2133	663	28637	8836	113	3251		
Cannanore	7377	7822	1921	3813	63603	2996	1128	88660	23461	1070	1626		
State	61498	59899	13518	39824	136552	24075	5938	341304	273483	5431	3588		

District	Vegetables				Non-food crops Oil seeds						
	Tamarind		Total		Coconut		Sesamum		Groundnut	Other oil seeds	Total
	Other	Total	Vegetables	fruits & vegetables	Vegetables	Crops	Vegetables	Crops			
(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)		
Trivandrum	1587	3376	62629	91238	139868	72775	16	..	303	73094	
Quilon	1008	1616	77761	106879	180153	81381	3681	..	104	85166	
Alleppey	301	1854	28454	46935	135313	61814	4718	..	132	66664	
Kottayam	390	2727	34103	52211	114183	53959	114	..	221	54294	
Idukki	164	1728	13358	25328	99547	14526	209	..	138	14873	
Ernakulam	785	3379	21465	43629	166187	61304	2601	..	217	64122	
Trichur	1256	1794	14124	37348	171748	50690	1929	..	180	52799	
Palghat	3012	2966	26528	51365	260540	19768	1196	13933	588	35490	
Malappuram	1147	2463	29577	67422	167073	61145	2321	..	23	63489	
Kozhikode	665	3566	16431	44403	128292	97725	233	..	157	98115	
Cannanore	625	2770	29552	117587	241141	85541	540	..	160	86241	
State	10940	50819	376561	684345	1804045	660628	17558	13933	2223	694347	

TABLE 3.1—(Contd.)  
DRUGS NARCOTICS AND PLANTATION CROPS

<i>District</i>	<i>Tobacco</i>	<i>Tea</i>	<i>Coffee</i>	<i>Rubber</i>	<i>Lemon grass</i>	<i>Cocoa</i>	<i>Total</i>
(1)	(46)	(47)	(48)	(49)	(50)	(51)	(52)
Trivandrum	..	1071	48	8153	35	265	9572
Quilon	..	2007	109	34933	41	924	38014
Alleppey	..	..	19	3875	8	1539	5441
Kottayam	..	2315	1252	55931	18	3913	63429
Idukki	..	24053	4587	15802	2022	566	47030
Ernakulam	..	30	174	21311	603	2388	24506
Trichur	..	438	33	8950	115	801	10337
Palghat	..	662	1659	9347	96	122	11886
Malappuram	..	174	178	17648	135	143	18278
Kozhikode	..	3889	27946	17277	283	1177	50572
Cannanore	404	1451	17340	21188	2598	931	43508
State	404	26090	53345	214415	5954	12769	322573

TABLE 3.1—(Concid.)

District	(Other non-food crops)								
	Coconut	Betel nuts	Fodder crops	Green manure crop	Other non-food crops	Total	Total non-food crop	Total cropped area	
(1)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	
Trivandrum	..	126	162	343	2344	2975	85641	225509	
Quilon	..	186	297	1067	2333	3883	127063	307216	
Alleppey	..	95	149	226	1151	1621	73726	209039	
Kottayam	..	59	465	328	2514	3366	121089	235272	
Idukki	..	7	405	208	1943	2563	64466	164013	
Ernakulam	..	95	70	301	3365	3831	92459	258646	
Trichur	..	72	112	325	2167	2676	65812	237560	
Palghat	53.4	4	16	1690	10873	17937	65313	925853	
Malappuram	..	487	8	3324	3737	7556	69323	256396	
Kozhikode	..	60	109	1269	2601	4039	152726	281018	
Canara	..	40	163	1685	12006	13894	144047	385188	
State	53.4	1231	1956	10766	45034	64341	1081665	2885710	

TABLE 3.2

## Percentage of area under crops to total Cropped area in each District 1978-79

District	Total cropped area	Total food crops	Total non food crops	Net area sown	Area sown more than once	Rice	Cereals and millets			Total Total food crops
							Others	Total cereals and millets	Total pulses	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Trivandrum	100	62.02	37.97	64.25	35.74	14.66	0.01	14.67	1.55	16.22
Quilon	100	58.64	41.36	67.03	32.97	16.54	0.01	16.54	0.92	17.46
Alleppey	100	64.73	35.27	68.24	31.76	36.12	..	36.12	0.38	36.51
Kotayam	100	48.53	51.47	78.53	21.47	15.92	..	15.92	0.77	16.69
Idukki	100	60.69	39.31	97.75	2.25	5.38	0.37	5.75	1.11	6.86
Ernakulam	100	64.25	35.75	70.50	29.50	38.73	0.08	38.81	0.58	39.39
Trichur	100	72.30	27.70	66.61	33.39	48.74	0.04	48.78	1.85	50.63
Palghat	100	79.96	20.04	66.09	33.91	53.53	1.19	54.71	2.90	57.61
Malappuram	100	65.16	34.84	80.98	19.02	31.77	0.02	31.79	1.05	32.85
Kozhikode	100	45.65	54.35	80.51	19.49	17.40	0.02	17.42	0.50	17.92
Cannanore	100	62.60	37.40	97.56	2.44	18.91	0.04	18.95	1.38	20.33
State	100	62.52	37.48	76.38	23.62	27.70	0.17	27.87	1.23	29.10



TABLE 3.2 (Contd.)

District	Condiments and spices										Fresh fruits		
	Sugar crops					Others					Total		
	Sugarcane	Others	Total	Pepper	Ginger	Cardamom	Betel nut	Others	Total spices	Mango	Jack		
(1)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)		
Trivandrum	0.02	0.29	0.31	2.67	0.06	0.08	1.45	0.07	4.32	3.44	3.51		
Quilon	0.26	0.02	0.29	3.43	0.38	0.05	1.78	0.15	5.79	2.05	2.28		
Alleppey	1.71	0.01	1.72	2.21	0.12	..	1.46	0.11	3.90	2.18	2.00		
Kottayam	0.08	0.26	0.33	5.79	1.42	..	1.12	0.83	9.15	1.74	1.94		
Idukki	1.07	0.15	1.21	7.33	0.53	28.04	0.95	0.22	37.07	1.46	1.22		
Ernakulam	0.07	0.13	0.21	2.86	0.97	..	2.62	1.03	7.48	2.05	1.81		
Trichur	..	0.47	0.47	1.48	0.08	0.00	3.17	0.20	4.94	2.28	1.75		
Falghat	0.60	2.50	3.10	0.41	0.15	1.12	0.70	0.17	2.55	1.45	1.25		
Malappuram	0.01	0.58	0.59	1.42	0.21	0.08	3.19	0.09	4.98	2.30	1.85		
Kozhikode	0.00	0.19	0.19	6.82	0.81	1.28	2.31	0.28	11.51	2.73	3.13		
Cannanore	0.02	0.12	0.14	6.44	0.25	0.36	3.91	0.48	11.45	1.92	2.03		
State	0.30	0.48	0.77	3.70	0.44	1.91	2.16	0.34	8.55	2.13	2.08		

TABLE 3.2.—(Contd.)

District	Fresh fruits and dried fruits					Vegetables					Total Total fruits & vegetables			
	Banana Plantain trees	Other fruit	Fine apple	Total	Cashew	Topioca potatoes	Sweet potatoes	Tubers	Tamarind	Other vegetable		Total fruits & vegetables		
(1)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)
Trivandrum	0.25	2.41	0.83	0.24	12.69	2.72	24.74	0.05	0.78	0.70	1.50	27.78	40.46	62.02
Quilon	0.40	1.21	0.5	0.29	9.81	3.05	22.18	..	2.27	0.33	0.53	25.31	34.79	58.64
Alleppey	0.41	1.70	0.94	0.17	8.93	1.60	9.88	0.03	2.67	0.14	0.89	13.61	22.45	64.73
Kottayam	0.72	1.81	0.90	0.24	7.86	0.50	11.46	0.02	1.69	0.17	1.16	14.50	22.19	48.53
Idukki	0.11	2.00	1.77	0.21	7.40	0.62	5.78	0.04	1.17	0.10	1.05	8.14	15.44	60.69
Ernakulam	0.71	1.58	0.82	0.23	8.87	1.67	5.42	0.02	1.25	0.30	1.31	8.30	16.87	64.25
Trichur	0.61	1.59	0.78	0.21	10.30	3.10	3.65	0.05	0.96	0.53	0.76	5.95	15.72	72.30
Palghat	0.27	0.75	0.86	0.95	8.55	3.93	4.81	0.61	0.89	0.92	0.91	8.14	15.76	79.96
Malappuram	0.72	0.93	0.64	0.09	15.21	8.67	8.50	0.69	0.93	0.45	0.96	11.54	26.30	65.16
Kozhikode	0.38	1.09	0.76	0.24	10.19	1.86	3.14	0.05	1.16	0.24	1.27	5.85	15.80	45.65
Cannanore	0.50	0.99	0.78	0.29	23.02	16.51	6.09	0.28	0.42	0.16	0.72	7.67	30.53	62.60
State	0.47	1.38	0.83	0.21	11.83	4.73	9.48	0.19	1.24	0.38	1.76	13.05	23.71	62.52

TABLE 3.2

## Non Food Crops

District	Oil Seeds			Total
	Coconut (37)	Seamum (38)	Groundnut (39)	
(1)	(37)	(38)	(39)	(41)
Trivandrum	32.27	0.01	..	0.14
Quilon	26.49	1.20	..	0.03
Alleppey	29.57	2.26	..	0.06
Kottayam	22.93	0.05	..	0.09
Idukki	8.86	0.13	..	0.08
Ernakulam	23.70	1.01	..	0.08
Trichur	21.34	0.81	..	0.08
Palghat	6.07	0.37	4.28	0.18
Malappuram	23.85	0.91	..	0.01
Kozhikode	34.78	0.08	..	0.06
Cannanore	22.21	0.14	..	0.04
State	22.89	0.61	0.48	0.08
				32.41
				27.72
				31.89
				23.08
				9.07
				24.79
				22.23
				10.89
				24.76
				34.76
				22.39
				24.06

TABLE 3.2—(Contd.)

District	Drugs narcotics plantation crop										Total	Cotton	Betel nuts	Fodder crops	Green manure crop	Other non food crop	Total non food crops	Total cropped area
	Tobacco	Tea	Coffee	Rubber	Lemon-Cocoa	grass												
(1)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)			
Trivandrum	..	0.47	0.02	3.62	0.02	0.12	4.24	..	0.06	0.07	0.15	1.04	1.32	37.98	100.00			
Quilon	..	0.65	0.04	11.37	0.01	0.30	12.37	..	0.06	0.10	0.35	0.76	1.26	41.36	100.00			
Alleppey	..	..	0.01	1.85	0.00	0.74	2.60	..	0.05	0.07	0.11	0.55	0.78	35.27	100.00			
Kottayam	..	0.98	0.53	23.77	0.01	1.66	26.96	..	0.03	0.20	0.14	1.07	1.43	51.47	100.00			
Idukki	..	14.67	2.80	9.63	1.23	0.35	28.67	..	0.00	0.25	0.13	1.18	1.56	39.31	100.00			
Ernakulam	..	0.01	0.07	8.24	0.23	0.92	9.47	..	0.04	0.03	0.12	1.30	1.48	35.75	100.00			
Trichur	..	0.18	0.01	3.77	0.05	0.34	4.35	..	0.03	0.05	0.14	0.91	1.13	27.70	100.00			
Palghat	..	0.20	0.51	2.87	0.03	0.04	3.65	1.64	0.00	0.00	0.52	3.34	5.50	20.04	100.00			
Malappuram	..	0.07	0.07	6.88	0.05	0.06	7.13	..	0.19	0.00	1.30	1.46	2.95	34.84	100.00			
Kozhikode	..	1.38	9.94	6.15	0.10	0.42	18.00	..	0.02	0.04	0.45	0.93	1.44	54.35	100.00			
Cannanore	0.10	0.38	4.50	5.50	0.67	0.24	11.30	..	0.01	0.04	0.44	3.12	3.61	37.40	100.00			
State	9.01	1.25	1.85	7.43	0.21	0.44	11.18	0.19	0.04	0.07	0.37	1.56	2.23	37.48	100.00			

TABLE: 4.1

## Outturn of important crops 1978-79

District	Cereals and Millets (Tonnes)						Rice				Pulses (Tonnes)		
	Autumn		Winter		Summer		Total	Jowar	Ragi	Other cereals and millets	Tur pulses	Other pulses	Sugarcane (gur)
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
Trivandrum	25326	23895	1228	50449	..	16	..	..	..	1766	187		
Quilon	39191	41736	572	81499	..	4	..	..	..	1252	3587		
Alleppey	36744	20495	78322	135561	..	5	..	..	..	318	18166		
Kottayam	24528	19024	22111	65663	..	..	..	..	..	539	986		
Idukki	5400	10059	325	15784	11	28	160	..	..	1239	1133		
Ernakulam	66922	58552	24950	150424	2	3	128	..	..	793	10709		
Trichur	53970	68168	31795	153033	..	48	38	..	..	1401			
Palghat	186447	157841	5038	349326	827	615	734	..	..	3924	13732		
Malappuram	54503	48040	10127	112670	..	8	22	..	..	1008	107		
Kozhikode	8041	44644	10758	63443	..	26	11	..	..	362	38		
Cannanore	43999	37550	13342	94891	19	19	69	..	..	3287	217		
State	544171	530004	198558	1272743	859	772	1162	..	..	15889	49870		

TABLE 4.1 (Contd.)

District	Spices and condiments (Tonnes)				Fresh fruits and dried fruits							
	Black pepper	Dry chillies	Dry ginger	Cured turmeric	Processed cardamom	Betel nuts	Banana	Other Jack	in '000			
	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(20)	(20)	
Trivandrum	1602	..	310	29	9	363	6800	22740	26126			
Quilon	3123	..	3335	200	8	730	12194	12282	25984			
Alleppey	1047	..	637	72	..	379	10449	10477	17447			
Kottayam	1076	..	9553	1946	..	318	24358	22119	17742			
Idukki	1304	..	6682	1968	..	1007	21629	18920	22608			
Ernakulam	1660	..	2058	347	2418	272	2020	15849	6525			
Trichur	977	..	205	127	..	1541	22889	9196	16184			
Palghat	314	63	824	272	193	363	12095	9082	17509			
Malappuram	705	77	966	126	10	1403	23935	7109	23475			
Kozhikode	6112	59	5714	972	189	1516	12418	9361	40198			
Cannanore	8411	520	2626	986	73	3027	22706	14295	37942			
State	26331	719	32910	7045	2900	10919	171493	151430	251140			

(a) Revised figure.

TABLE 4.1—(Concl.)

District	Raw cashew	Tapioca	Sweet Potatoe	Ground nut	Sesamum	Coconut (in million nuts)	Cotton (Bales of 170 Kg.)	Tobacco	Tea	Coffee	Rubber
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)
Trivandrum	2973	813506	706	..	4	369	..	..	987	18	5060
Quilon	6905	988175	90	..	920	323	..	..	807	41	24060
Alleppey	2892	314263	441	..	896	349	..	..	..	7	1730
Kottayam	374	448025	290	..	25	190	..	..	657	472	32187
Idukki	316	167251	438	..	48	34	..	..	34219	1729	10140
Ernakulam	2655	229145	356	..	806	329	..	..	..	66	11421
Trichur	2025	113027	670	..	540	333	..	..	995	12	6158
Palghat	24617	233319	12654	13659	323	71	7241	..	1334	1394	4513
Malappuram	13977	271460	11892	..	766	326	..	..	75	95	9785
Kozhikode	4460	94722	720	..	72	535	..	..	6553	14923	9323
Cannanore	42996	371153	7099	..	313	352	..	768	1737	9260	9300
Slate	84190	4044046	35356	13659	4713	3211	7241	768	47365	26017	123677

TABLE 5.1  
Average farm prices of certain Commodities

District	Average farm prices (Harvest price) 1978-79							Sugarcane M.T.	
	Paddy Qtl.	Coconut 100 Nos.	Areca nut 100 Nos.	Tapioca Qtl.	Cashewnut Qtl.	Banana 100 Nos.	Pepper Qtl.		Ginger Qtl.
Trivandrum	151.16	92.88	6.57	31.15	398.75	39.08	1472.29	NA	NA
Quilon	137.93	101.53	5.74	30.45	404.08	33.93	1465.53	717.36	120.00
Alleppey	122.36	103.57	5.51	36.82	405.17	35.24	1467.08	518.75	130.00
Kottayam	119.33	104.60	5.28	34.64	386.88	34.44	1484.34	712.85	..
Idukki	135.31	125.71	4.66	35.82	378.33	31.96	1502.59	551.15	..
Ernakulam	132.00	117.67	5.91	30.05	405.16	34.53	1527.77	734.41	..
Trichur	122.63	108.97	7.19	40.58	387.71	34.67	1541.86	NA	..
Palghat	120.98	102.95	5.48	32.13	397.50	30.59	1535.73	717.22	126.00
Malappuram	131.31	100.27	4.64	28.48	411.67	31.08	1512.61	716.04	..
Kozhikode	129.38	92.64	3.57	35.69	403.33	30.13	1536.34	704.99	..
Cannanore	114.37	103.56	4.58	56.33	410.00	31.02	1510.42	650.13	..
State	125.76	102.10	5.09	50.85	407.12	32.86	1508.16	671.42	127.47



TABLE 6.1

## Agricultural Wages 1978-79

Skilled Labour: (1) Carpenter

District	July	August	September	October	November	December	January	February	March	April	May	June
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Trivandrum	12.00	12.00	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	13.50	13.50
Quilon	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	16.50
Alleppey	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	16.00
Kottayam	14.75	14.75	14.75	14.75	14.75	14.75	14.75	14.75	14.75	14.75	14.75	15.25
Idukki	..	..	..	..	..	..	..	..	..	..	..	..
Ernakulam	14.13	14.13	14.13	14.13	14.13	14.13	14.13	14.13	14.13	14.13	14.13	15.13
Trichur	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Palghat	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
Malappuram	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Kozhikode	13.50	14.00	14.00	14.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	16.50
Cannanore	15.00	15.00	15.00	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50	17.00



## (3) Paddy field labour

	July	August	September	October	November	December	January	February	March	April	May	June
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
A—Men												
Trivandrum	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Quilon	8.00	8.00	8.00	5.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	9.50
Alleppey	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.20	8.20	8.20
Kottayam	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Idukki	..	..	..	..	..	..	..	..	..	..	..	..
Ernakulam	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	10.25
Trichur	8.50	8.50	8.50	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
Palghat	6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.75
Malappuram	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Kozhikode	9.50	9.50	9.50	9.50	9.50	9.50	9.50	9.50	10.00	10.00	10.00	10.00
Cannanore	12.50	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00



TABLE 7.1  
Number of livestock, Poultry and Agricultural Machinery and implements in Kerala

District	Males over three years				Females over three years				Total	Young stock	Total		
	Breeding		Others		Total In Milk		Breeding					Others	
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)				(10)	(11)
Trivandrum	117	8267	957	9341	55342	34342	3745	20	92	93541	74216	177098	
Quilon	326	26177	1201	27704	97473	97440	7826	26	228	202993	190804	421501	
Alleppey	272	6799	643	7714	93328	85097	12249	..	52	190726	159427	357867	
Kottayam	336	8147	819	9302	74050	65134	6615	113	569	146481	137754	293537	
Idukki	412	8712	1542	10666	44450	36244	3936	112	544	85286	72210	168162	
Ernakulam	546	53604	1826	55976	65246	47768	6214	218	384	119830	121637	297443	
Trichur	272	32534	1451	34257	54502	3423	3874	23	180	92814	92994	220065	
Palghat	248	52074	5184	57506	57591	41071	4260	1038	223	104183	97235	258924	
Malappuram	209	58573	2236	61018	32834	25895	3982	878	258	63847	60105	184970	
Kozhikode	254	35888	2645	38787	54789	49506	9785	108	331	114519	102469	255775	
Cannanore	470	53241	5182	58943	75435	68742	12308	33	242	156760	155114	370717	
State	3462	344016	23636	371114	705040	585474	74794	2569	3103	1370980	1263965	3006039	

TABLE 7.1—(Contd.)

## Buffaloes

District	Males over three years					Females over three years					Young stock	Total
	Breeding	Working	Others	Total	Breeding (dry)	Not calved	Working	Others	Inmilk	Total		
(1)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Trivandrum	281	10985	939	11605	7401	814	105	64	12001	20385	7483	39473
Quilon	66	9449	194	9709	5981	599	56	41	7553	14230	5741	29680
Alleppey	35	3832	257	4124	2362	471	20	32	2870	5755	1269	11148
Kottayam	121	2294	135	2550	1857	313	62	35	3233	5500	1769	7819
Idukki	200	2313	352	2865	3125	747	247	190	4660	8969	4279	16113
Ernakulam	60	15968	223	16251	2384	285	164	31	6315	9179	3260	28690
Trichur	79	23461	387	24127	7012	1255	229	69	12514	29079	12508	57714
Palghat	183	77896	2011	80090	10478	1586	2006	480	13253	27803	19156	127049
Malappuram	366	34368	889	35623	5642	1269	1809	127	8796	17643	10725	63991
Kozhikode	106	11226	466	11798	2991	407	205	67	5729	9399	3681	24878
Cannanore	280	18407	1345	20032	6413	1267	136	60	9774	17650	8163	45845
State	1777	210199	6798	218774	55646	9013	5039	1196	86698	157592	78034	45440

TABLE 7.1—(Contd.)

District	Goats										Total horses			
	Sheep					Goats								
	One year and above	Below one year	Total	One year and above	Below one year	Total	3 years and above	Below three years	Total	Cam- els		Donkeys	Pigs	
(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	
Trivandrum	..	..	..	88235	68258	156493	..	..	23	..	..	..	11644	384731
Quilon	..	..	91	114477	93673	208150	..	..	..	..	..	..	2523	661945
Alleppy	..	..	..	63297	51058	116355	..	..	1	..	..	1	509	485881
Kottayam	..	..	23	90913	63847	162760	..	..	9	..	..	11	55727	521886
Idukki	..	..	138	55794	33299	89093	..	..	..	..	..	..	39643	313185
Ernakulam	..	..	..	83083	71197	156280	..	..	..	..	..	36	22720	50513
Trichur	..	..	..	83623	74140	162763	..	..	3	..	..	..	1985	442530
Palghat	..	..	2237	82916	55756	138672	..	..	45	..	..	200	1378	528505
Malappuram	..	..	4	90316	50342	169658	..	..	9	..	..	..	77	418709
Kozhikode	..	..	39	83844	67916	151760	..	..	..	..	..	17	9033	441522
Canimnore	..	..	14	93197	73116	171313	..	..	..	..	..	1	27116	615006
State	..	..	2546	956695	726602	1683297	..	..	90	..	..	266	172375	5319033

TABLE 7.1—(Contd.)

District	Poultry			Plough			Sugarcane crushers		
	Fovls (40)	Ducks (41)	Others (42)	Total (43)	Wooden (44)	Iron (45)	Carts (46)	Power (47)	Bullocks (48)
(1)									
Trivandrum	1114273	7884	248	1122405	9056	5788	2371	6	96
Quilon	1379485	19762	62	1399309	19266	20519	1913	17	36
Alleppy	1545893	159617	261	1705771	15101	60506	1237	53	107
Kottayam	1132951	50660	476	1184087	7255	800	732	20	139
Idukki	613230	9691	293	623204	6114	862	250	39	111
Ernakulam	1444649	105935	355	1550939	45357	6701	1017	55	115
Trichur	1247528	30690	106	1278324	27777	3968	2322	29	56
Palghat	985379	18289	724	1004392	71888	16711	9236	95	44
Malappuram	1333587	8784	61	1362432	48514	1051	476	101	31
Kozhikode	1006589	11184	377	1018150	18995	3291	631	2	45
Cannanore	1132622	7073	142	1139837	47652	2914	340	42	83
State	12956186	429559	3095	13388350	316975	69191	20525	459	863



TABLE 7.1—(Contd.)

District	Oil engine (49)	Electric pumps (50)	Tractors (51)	Chassis		
				More than 4.5 kg. (52)	Less than 4.5 kg. (53)	Percian tubels (54)
(1)						
Trivandrum	233	150	32	50	23	132
Quilon	287	289	32	15	14	93
Alleppey	2034	1205	158	163	132	3397
Kottayam	768	409	64	39	48	854
Idukki	242	172	28	13	20	102
Ernakulam	3976	10882	157	27	12	402
Trichur	3735	6971	101	31	19	658
Palghat	3839	3516	619	30	9	72
Malappuram	3770	920	16	27	2	48
Kozhikode	966	431	80	103	72	281
Cannanore	8909	1028	45	87	49	75
State	28759	25973	1332	585	400	6114

## PART IV

1. Working class cost of living indices
2. Parity index
3. Quarterly retail prices
4. Statement of consumer prices index numbers  
for 1978-79
- 4.1. Statement showing the consumer price  
index numbers from July 1978 to June 1979
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6. Notes on certain crops
  1. Tea
  2. Coffee
  3. Rubber
  4. Cardamom
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7. Classification of soil in Kerala
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and the processed products
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### 1. Working class cost of living indices

The consumer price index for the State was revised with effect from August 1975 with base 1970 = 100 on the basis of a family budget survey conducted by this department. For the purpose of comparison the cost of living indices for the year was estimated for the old base with the linking factor. The average consumer price index numbers in the selected 10 centres of the State during the year 1977-78 and 1978-79 are given in the following tables.

TABLE—1

Sl. No.	Centre	Average cost of living indices	
		1977-78	1978-79
1	Trivandrum	1386	1472
2	Quilon	1384	1454
3	Punalur	1323	1360
4	Alleppey	1345	1395
5	Kottayam	1364	1444
6	Munnar	1379	1409
7	Ernakulam	1391	1454
8	Trichur	1396	1485
9	Chalakydy	1391	1478
10	Kozhikode	1562	1655

As comparable figures were not available in respect of the 5 centres newly added since August 1975 estimates were made only for the centres. Month wise details of consumer price for the 10 centres for the agricultural year 1978-79 is given in Table 4 of Appendix. Statement showing the consumer price index numbers from July 1978 to June 1979 with base 1970 = 100 is also given in Table 4.1. The average cost of living indices during the year has shown a gradual decline during the year when compared with those of the last year.

### 2. Parity index

The index of parity between prices received and prices paid by the

farmers during each month of the year 1977-78 and 1978-79 is given in the following Tables.

TABLE - II  
Index of parity

Month	Year	
	1977-78	1978-79
July	103	101
August	103	101
September	100	100
October	100	101
November	98	101
December	102	101
January	103	97
February	103	96
March	102	98
April	102	98
May	106	96
June	104	97

### 3. Quarterly retail prices

The trend in quarterly retail prices of 12 important commodities is presented in the following paragraphs. District-wise quarterly retail prices have been given in Table 2.

1. *Rice*: The price of rice per Kg. varied from Rs. 1.62 to Rs. 1.67. The highest being Rs. 1.67 in Idukki district in all the quarters.

2. *Chillies*: The price of chillies varied from Rs. 7.97 to Rs. 13.35. The minimum price is reported from Alleppey district and the maximum from Trivandrum.

3. *Tapioca*.—The maximum price of Re. 0.85 per k. g. was reported from Cannanore during the 3rd quarter. The minimum price reported was Re. 0.36 during the first quarter from Trivandrum district.

4. *Black gram*.—The price of black gram varied from Rs. 3.42 to Rs. 4.80 per k. g. The maximum recorded was from Malappuram district.

5. *Tea*.—The price of Tea per k. g. fluctuated between Rs. 14.05 to Rs. 21.73. The lowest rate is from Idukki district and the highest from Kozhikode district.

6. *Coffee*: The variation in price is from Rs. 16.00 to 19.23 per k. g. The minimum price was from Idukki district and the maximum from Trichur district.

7. *Sugar*.—The fair price of sugar was reported as Rs. 2.30 per kg. in all districts during the year.

8. *Coconut Oil*.—The maximum price per litre reported was Rs. 13.90 from Cannanore district and the minimum Rs. 9.98 from Quilon district.

9. *Gingilly Oil*.—The price varied from Rs. 7.56, per litre in Alleppey district to Rs. 10.44 in Cannanore district.

10. *Coconut*.—The price of coconut per dozen fluctuated between Rs. 10.79 and Rs. 19.80. The maximum price was reported from Idukki district and the minimum from Trivandrum district.

11. *Tobacco (Jafna)*.—The price varied from Rs. 8.27 to Rs. 16.00 per kg. The highest price was reported from Idukki district and the lowest from Alleppey district.

12. *Tobacco (Vadakkan)*.—The price per kg. varied between Rs. 8.07 and Rs. 14.87. The lowest price reported was from Palghat during the 5th quarter and the highest price was from Ernakulam during the 1st quarter.

#### 5. Export of Agricultural Commodities

The details of foreign exports from the ports of Kerala during 1977-78 and 1978-79 are furnished in table 3.

TABLE 2  
 Quarterly Average Retail Prices at District Headquarters for 1978-1979

Commodity	Quarter	Trivandrum				Kollam				Idukki				Ernakulam				Tirichur				Palghat				Mala-ppuram				Kozhikode				Cannanore			
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)						
Coconut/Doz.	I	15.05	13.85	14.53	14.56	18.76	16.01	16.53	15.40	14.29	13.21	14.50																									
	II	14.90	14.51	14.94	16.03	19.80	17.08	16.73	16.28	14.47	13.43	14.80																									
	III	11.46	13.45	12.88	14.85	19.64	15.35	14.62	12.45	13.31	13.20	13.75																									
	IV	10.79	12.55	12.45	12.73	17.74	15.30	14.43	11.39	12.53	12.85	13.38																									
Coconut Oil/Ltr.	I	12.93	11.83	11.87	12.18	12.54	13.18	12.22	12.12	12.24	12.07	13.90																									
	II	13.54	12.34	12.32	12.52	12.91	13.50	12.62	12.58	12.45	12.30	13.70																									
	III	11.26	10.47	10.30	10.81	11.98	11.70	10.81	10.81	10.74	10.40	12.03																									
	IV	10.87	9.98	10.04	10.32	10.89	11.29	10.45	10.37	10.18	10.10	11.56																									
Rice (F.P.)Kg.	I	1.62	1.64	1.74	1.63	1.67	1.62	1.64	1.62	1.65	1.63	1.63																									
	II	1.62	1.65	1.65	1.63	1.67	1.64	1.65	1.64	1.65	1.63	1.65																									
	III	1.63	1.64	1.64	1.64	1.67	1.64	1.64	1.66	1.66	1.64	1.64																									
	IV	1.64	1.64	1.64	1.64	1.67	1.64	1.64	1.66	1.64	1.64	1.64																									
Blackgram/Kg.	I	4.24	4.26	3.69	3.76	4.37	3.82	3.47	3.95	4.69	3.55	3.44																									
	II	4.29	4.00	3.77	3.80	4.43	3.87	3.63	3.91	4.80	3.50	3.73																									
	III	4.07	4.00	3.63	3.80	3.81	3.81	3.80	3.89	4.71	3.73	3.56																									
	IV	3.98	4.00	3.63	3.90	4.43	3.82	3.60	4.00	4.65	3.73	3.42																									

Gingelly oil/litre	I	9.59	9.00	7.56	9.00	9.08	9.50	8.73	8.43	8.72	7.84	10.44
	II	9.25	9.00	7.71	9.00	8.88	9.00	8.48	8.40	8.98	8.07	10.00
	III	9.42	9.13	7.77	9.00	9.00	9.00	8.62	8.25	9.31	8.18	10.00
	IV	9.79	9.10	7.91	9.00	8.95	9.00	8.73	8.25	9.25	8.19	10.00
Tapioca /Kg.	I	0.36	0.47	0.55	0.59	0.50	0.51	0.44	0.35	0.47	0.55	0.78
	II	0.41	0.53	0.54	0.60	0.50	0.50	0.48	0.35	0.50	0.56	0.80
	III	0.48	0.50	0.57	0.60	0.60	0.50	0.49	0.48	0.54	0.60	0.85
	IV	0.50	0.53	0.59	0.60	0.70	0.50	0.50	0.50	0.57	0.60	0.80
Sugar (F.P.)Kg.	I	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
	II	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	III	..	..	..	..	..	..	N.A.	..	..	..	..
	IV	..	..	..	..	..	..	N.A.	..	..	..	..
Chillies/Kg.	I	9.85	8.63	8.20	9.10	8.10	9.25	9.63	9.06	8.28	8.29	9.23
	II	13.35	12.14	12.05	11.76	11.48	12.44	12.20	11.77	10.81	11.38	11.77
	III	11.49	9.76	10.36	10.96	11.00	11.15	11.11	10.12	9.91	9.87	9.60
	IV	9.11	8.28	7.97	8.68	8.32	9.07	9.01	8.35	8.45	8.00	8.73
Coffee Powder/Kg.	I	19.02	19.50	19.20	18.84	16.00	19.10	19.23	19.50	19.06	19.25	18.68
	II	18.40	18.50	18.40	19.00	16.00	18.69	18.50	18.40	18.50	18.50	18.10
	III	18.40	18.50	18.40	18.40	16.00	18.40	18.50	18.50	18.40	18.50	18.40
	IV	18.03	18.50	17.67	18.40	16.00	18.22	17.58	18.40	17.83	17.67	17.97



TABLE-2 (Contd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Tea/Kg.	I	18.94	19.26	20.40	19.46	15.38	19.26	19.03	19.40	19.10	21.73	19.12
	II	18.34	19.00	19.00	19.00	15.00	19.13	18.40	18.40	19.10	21.00	18.71
	III	18.34	19.00	19.00	19.00	14.93	19.00	18.40	18.40	18.85	20.19	18.34
	IV	18.34	19.37	19.00	19.00	14.05	19.00	18.40	18.40	18.34	18.56	18.34
Tobacco/Kg.	I	11.00	10.97	12.00	12.53	16.00	15.00	13.00	..	..	..	..
	II	11.00	10.00	11.00	12.00	15.40	15.00	13.00	..	..	..	..
	III	11.73	9.34	10.58	11.47	14.00	15.00	13.00	..	..	..	..
	IV	12.00	8.27	8.93	10.00	9.42	11.73	13.00	..	..	..	..
Tobacco/Kg. Vadakan	I	10.00	10.97	11.00	11.25	14.50	14.87	11.50	11.00	12.19	12.00	12.32
	II	10.00	10.00	10.00	11.25	14.73	12.25	11.50	11.00	12.00	12.79	13.50
	III	10.73	9.34	9.75	11.00	14.00	12.00	11.50	10.60	12.00	12.40	13.07
	IV	11.00	8.27	8.31	10.00	9.42	9.00	11.50	8.07	12.00	10.00	10.00

TABLE 3  
Foreign Export from the ports of Kerala 1977-78 & 1978-79

Sl. No.	Commodity	Unit	1977-78 Quantity	Value (Lakhs)	1978-79 Quantity	Value (Lakhs)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Cardamom	qtls.	3453	457.40	429.93	597.78
2	Cashew Kernels	M.T.	28288	10089.30	27635.25	8628.92
3	Cashew shell oil	000'ltrs.	2542	125.40	5119.88	454.92
4	Coffee	M.T.	13849	4442.24	22092.29	4451.10
5	Coir & Coir products	"	19543	1462.60	22135.67	1686.61
		"	24230	985.20	21294.57	1100.56
	Coir yarn & fibre		43773	2447.80	43430.24	2787.17
	Total		6409	926.02	9087.84	899.94
6	Ginger	"	55	35.59	57.67	40.07
7	Lemongrass oil	000 ltrs.	34439	8290.82	32701.88	10481.33
8	Marine products	M.T.	Nil	Nil	206.00	2.04
9	Oil cake	"	21512	4338.89	29631.77	2784.58
10	Pepper	"	..	148.29	122.23	42.78
11	Rubber manufacture	value	47912	10510.91	44286.24	6652.41
12	Tea	M.T.	..	1221.91	..	1540.39
13	Wood and Timber	Value	..	3729.58	..	4773.36
14	Sundries (Miscellaneous item)	"	"	"	"	"

TABLE 4

## Statement of Consumer Price Index numbers for the agricultural year—1978-79

(Base 1970=100)

Centre	July 1978	August	September	October	November	December	January 1979	February	March	April	May	June	Average
Trivandrum	168	169	170	170	171	171	169	168	170	174	175	176	171
Quilon	169	170	171	171	172	171	169	169	171	175	175	177	172
Punalur	163	163	162	161	161	162	161	161	163	167	169	171	164
Alleppey	164	164	164	163	164	164	163	162	163	167	169	172	165
Kottayam	166	166	165	164	164	163	163	164	166	170	171	174	166
Ernakulam	165	166	166	166	165	164	164	165	165	168	168	170	166
Trichur	169	169	170	170	169	169	169	169	171	174	175	177	171
Chalakudy	168	168	168	168	168	168	168	168	170	173	174	176	170
Munnar	175	175	175	176	177	177	177	176	177	180	180	184	177
Kozhikode	174	175	175	175	174	174	173	173	174	177	178	180	175

TABLE 4.1

Statement showing the Consumer Price Index Numbers from July 1978 to June 1979

Centre	July	August	September	October	November	December	January	February	March	April	May	June
Trivandrum	168	169	170	170	171	171	169	168	170	174	175	176
Quilon	169	170	171	171	172	171	169	169	171	175	175	177
Punalur	163	163	162	161	161	162	161	161	163	167	169	171
Alleppey	164	164	164	163	164	164	163	162	163	167	169	172
Kottayam	166	166	165	164	164	163	163	164	166	170	171	174
Mundakayam	158	159	160	161	162	163	162	162	163	166	166	168
Munnar	175	175	175	176	177	177	177	176	177	180	181	184
Ernakulam	165	166	166	166	165	164	164	165	165	168	168	170
Chalakudy	168	168	168	168	168	168	168	168	170	173	174	176
Trichur	169	169	170	170	169	169	169	169	171	174	175	177
Palghat	165	166	165	164	163	164	164	164	166	170	171	174
Malappuram	167	166	166	165	166	167	166	167	169	173	175	177
Kozhikode	174	175	175	175	174	174	173	173	174	177	178	180
Meppadi	172	171	172	171	172	172	172	173	175	178	178	181
Cannanore	167	167	167	166	165	165	164	165	166	179	171	174

## 6. Notes on certain crops in Kerala

### 1. Tea.

India continues to be the biggest producer of Tea in the world. Tea is one of the principal foreign exchange earners. Tea industry substantially contribute to the national exchequer and also provides employment to a large number of people. India accounts for nearly 46 per cent of the world production of tea. India ranked first among the exporters of tea in the international market but of late Ceylon has wrested the first rank from India.

*Climate.*—A hot moist climate is most suitable for tea plantation, the temperature varying from 55F to 95F and an annual rainfall ranging between 100 to 130 inches. Tea is usually cultivated at altitudes ranging from 3000 feet to 5000 feet above mean sea level.

*Soil.*—The best soil suitable for the successful cultivation of tea is a high friable soil of good depth through which water percolates freely.

*Planting.*—After removing the forest growth and providing for roads, drains and building sites the planting is done. The actual spacing of plants will depend upon the layout of the land used for cultivation. They are usually planted in square, rectangular or triangular patterns suitably spaced so that when mature they cover the ground almost completely without over crowding and providing for a coverage of about 3000 plants per acre. "Hedge planting" i. e. planting in rows 5 apart with a spacing of 2' between the bushes in a row is also done in new estates. Before planting is done pits of 9" square and 18" deep are taken and the pits filled with the soil best suited for the cultivation of tea. Planting will begin in June or July depending mainly upon the South West Monsoon. Water is essentially needed for the young plants for the first two or three months after planting. Young plants taken from the nursery are preferred to the seeds. Usually those plants are removed from the nursery after 6 to 18th months with great care so that the tap root of the plant is not damaged and planted in the places fixed for the purpose.

*Pruning.*—When the plants are about two years old and five to six feet high they are pruned to stimulate lateral growth and to develop them into a bush.

*Plucking.*—Plucking is usually done by women and children. The young and freshly sprouted leaves with two leaves and a bud are plucked. Plucking is done through out the year in several rounds. The period of one round varies according to the altitude of the land. In the high ranges the plucking rounds cover a period upto fourteen days whereas in the plains the period is only seven or eight days.

*Manure.*—The important manures used are mixtures of nitrogen phosphorous and potash. In some estates ammonium sulphate is also widely used.

*Yield.*—The average yield of a good estate is about thousand pounds of prepared tea per acre.

*Diseases.*—There are many kinds of diseases and attacks on the tea bush. Tea mosquito, the red spider and thrips are some of the important pests attacking the crops.

*Life of the plant.*—The average life of a tea plant varies from 60 to 80 years.

*From the garden to market.*—The leaves plucked from tea garden have to undergo a series of processes before it appears in the Market for sale.

In the tea factory the leaves are spread on a wire mesh or hessian cloth rack for a period of 18 hours for eliminating moisture so that it can be rolled easily. The next stage is called rolling. A rolling machine specially made for this purpose with pressure adjustments is used to twist the leaves for breaking the leaf cells so that the leaf juices ooze out. Then the rolled leaves are taken from the rolls breakers and put in the fermentation room. Fermentation is a process of Oxidation where the leaves undergo a chemical change. The green colour of tea leaves change into reddish hue of copper. The next process is known as drying hot air (200° to 230°) from the drier furnace is forced into the chamber where the leaves are dried.

The last two processes are grading and packing. There are two important classifications of grade. They are leaf grades and broken grades.

The former group is mainly divided into orange pekoe and pekoe souchong; broken orange pekoe, broken pekoe souchong. Fannings and dust are important broken grades. They are then packed category-wise and sent to the market for sale.

Besides the black tea the manufacture of which has been described above green tea is also manufactured in India in small quantity. In this process the fresh leaf is subject to heat treatment by steaming or roasting. The green leaf after the treatment is rolled and dried the process being repeated till the desired degree of dryness is reached.

2. *Coffee*—Coffee was first discovered in Africa, although the earliest cultivation began in Southern Arabia; Coffee as an important plantation crop was introduced in India and Africa. The production of coffee in India is only 1 percent of the world production. There are two main species of coffee grown in India namely Arabica and Robusta. Robusta flourishes at lower levels and has more power of resistance against extremes of climate, pests and diseases. It is easily distinguishable from Arabica by the size of its leaves and appearance of the berries.

*Climate.*—Coffee is a tropical plant. It is successfully cultivated in places where the altitudes is ranging between 1500 to 6000 feet above mean sea level. The most suitable attitude is between 2500 feet to 5000 feet. It needs a well distributed, rainfall of about 60 to 80 inches per annum and a distinct rainy and dry season with a minimum average temperature of 70°. A good dry spell from about December to March with a few intermittent showers of March and April and heavy rainfall in July and August constitute ideal conditions for the growth of the coffee plant (Report of the Plantation Enquiry commission of Coffee 1956, Government of India.

*Soil.*—Coffee requires sandy soils or clay loam soils with a good subsoil drainage system.

*Planting.*—Coffee is grown from seed usually. It is also propagated through cuttings from mature trees or shoots. Propagation from seeds is usually done in January or February in well prepared nursery beds. It is essential that the nursery beds must have shades to protect the tender shoots. These plants are to be transplanted after four to six months in the nursery. When the plants are twenty inches in height they are finally transplanted. The spacing between each plant is ordinarily eight to nine feet. The plants are manured well and watered frequently.

In the second method of propagation lower branch of the tree are bent down under the earth for atleast four months so as to enable new roots to sprout up from these branches.

Shade trees are provided in coffee plantation for protection of tree from the full intensity of the sun and for soil conservation.

*Pruning.*—Usually the coffee plants begin to bear fruit within 5 to 7 years of planting. The colour of the berries is green at first. The colour slowly changes to golden and then to bright red. These red cherries are plucked up by hand. Several pluckings are necessary before a crop is completely harvested.

*Manures.*—The important manures used for the coffee plants are super phosphate, ammonium sulphate, copper sulphate and urea.

*Yield.*—Under good climatic conditions a coffee plant yields,  $\frac{1}{2}$  to 2 lbs of green coffee in a season. Good yield may be obtained from a plant for a period of 20-30 years. Excessive rains or want of rains in the blossoming season will adversely affect the yield.

*Diseases*—The following diseases are prevalent in the coffee estates. They are (1) Coffee stem borer (2) Shot hole borer (3) leaf disease (4) root-rot (5) die back (6) chlorosis and (7) green bug

*From garden to the market:*—There are two processes by which raw coffee is cured. They are known as dry and wash methods. By the first method the coffee cherries are washed and spread out on the cement floors in the open air for drying. When they are completely dried they are allowed to run through fanning and hulling machines.

The second process known as wash process is entirely different. The cherries are put in the pulping machine which breaks them and the pulpy skin of the cherries are automatically removed. Then those cherries are put into big tanks for about 24 hours. A jelly like substance known as honey will be formed by these cherries due to fermentation. This honey is removed by thorough washing (canals). Then these cherries are spread out to dry for 2 to 3 weeks. When these are completely dried they are put through hulling and polishing machines. The coffee prepared by the wet method is called parchment. For preparing parchment coffee only ripe berries can be utilised.

Berries at different stages of maturity have to be converted into cherries. They are then graded and packed. The important grades are arabica, cherry, arabica parchment, robusta cherry and robusta parchments.

3. *Rubber*.—In India attempts were first made to plant rubber in Belgium and Ratnagiri in the Bombay State. 94 per cent of the total area under Rubber is in the Kerala State. 92 per cent of the total production of Rubber in India is also from Kerala. India's place in the world acreage under rubber is comparatively very low. India's production comes 2.2 per cent of the total world output of natural rubber. Before a tyre factory was established in India in 1938 the raw rubber was exported to foreign countries. Owing to a record production of rubber on the one hand and the lower off take by the industry on the other, rubber experienced a problem of surplus in the last one or two years. Consequently rubber growers in the country were confronted with a perceptible fall in rubber prices. Even State intervention by way of fixation of a floor price and the entry of the State Trading corporation into the market could not solve the the problem to any considerable extent.

*Climate*.—Rubber usually grows in the tropical belt lying within 15° N and 10° S of the equator and usually at an altitude of 1000 feet above sea level. For the cultivation of rubber a warm and humid climate is necessary. The annual rainfall should be between 80–120 inches and should be well distributed.

*Soil*.—A still alluvial soil which is neither too steep nor too swampy is suited for cultivating rubber.

*Planting*.—Young plants or seeds are planted in pits of about 18" x 18". The planting season is from May to September usually 150 to 200 plants are planted in an acre.

*Tapping*.—Tapping of rubber will begin seven or eight years after planting. The period of tapping is from September to January.

*Diesses*.—There are two serious leaf diseases of rubber now prevailing in India. They are "orduimhovea" and phytophthora meadi which cause secondary leaf fall. These disease affect the growth of the tree and the yield of the tree. Another disease known as brown blotch is prevalent in the trees which are used for frequent tapping. The symptom of the disease is the cessation of the latex production by the trees in the affected portion of the bark.

*From the estate to the market*.—The latex brought by the tappers is first of all freed from sand ; bark and other impurities by straining at the coagulating shed constructed specially for the purpose. In the case of crape rubber coagulation is done by using acetic acid. For changing latex into sheet rubber, the latex after being bulked and diluted is put into shallow pans. For removing water and for getting a definite shape the coagulum is pressed by hand. Then these sheets are allowed to pass two or three times between smooth rollers. The sheets are usually again passed through a machine for printing the trade mark of the estate. These sheets are washed. Then



these are placed in specially constructed houses known as smoke houses and hot air with temperature of 115° F to 120° F is allowed to circulate in the room. This is done for 15 days. The colour of the sheet will change from white to black. There are three important types of rubber, smoked sheet, latex crape and scraprubber. Of these the most important one is smoked sheet.

#### 4. *Cardamom.*

The important cardamom producing countries are India, Ceylon and Indo China. India is the largest producer of cardamom in the world. Cardamom is taken from the plant *Ellettaria cardamom*. Kerala ranks first as the largest producer of cardamom. 80 per cent of the world output of this valuable spice is produced in India. India's competitors are Ceylon, Indo-China and Guatemala. Cardamom possess an aromatic odour and it is commonly used for flavouring and medicines.

*Climate*.—The best climate suitable for cardamom, cultivation is a warm and humid atmosphere with a temperature ranging between 50°–95° F. It is cultivated in the shades of huge forest trees. Cardamom plants require a fairly well distributed and annual rainfall of 60–80 inches. The best altitude for cardamom planting is between 2500 to 5000 feet.

*Soil*.—Cardamom is cultivated usually in high ranges which has a fairly deep rich loam soil and a place sheltered from strong winds and too much sunlight.

*Planting*.—During February–March the forest land chosen for planting the cardamom is cleared. But care is taken that big tree providing shades are not cut down. Small pits of 2 feet squares and one foot deep are dug. The distance between one pit and the next varying from 8 to 10 feet, thus providing for about 700 pits in one acre of land. During the month of May or June when the South West Monsoon sets in, the seeds are sown. Cardamom plants are usually prepared in specialised nurseries. The plants raised from seeds are usually free from any kind of disease. When these plants attain one year of growth they are transplanted. Usually two plants are planted in one pit. In August–September the stagnant water is allowed to drain off.

*Plucking*.—The crop begins to yield from the third year onwards, and annually thereafter. The harvest will begin in the month of August of the 3rd year of growth and lasts for nine months. The fruits are gathered at intervals of 30 to 40 days.

*Yield*.—The first yield is low. The yield attains a normal stage by the fifth year

*Life of plants*.—Nine years is the average life of the plant.

*Manure*.—The important manures used are well-rotten, cattle manure, sheep and fish manure and leaves of *phyllanthess emblica*. A mixture of caster cake bone meals and potassium chlorate is also considered to be a good manure.

*Diseases.*—The most important disease affecting the cardamom plantations is the virus diseases 'Katte' which is rampant in most cardamom plantation. The symptom of the diseases is the mottling or curling of the leaves and degeneration of the clumps. The remedy lies in the roguing of affected plants. Another menace is that caused by thrips mite etc. Dusting the plants with gamaxene is the remedy.

*From the estate to the market.*—The capsules of the cardamom are dried in the sun or specially built dry houses by using artificial heat. Usually 3-4 days are taken for drying the cardamom in the sunlight but at the same time 48 hours is only needed for artificial drying. The sundried produce retains the mucilaginous coating on the seeds and possesses characteristic sweet aroma. The dried capsules are then cleaned. The final product of green cardamom is 20 to 28 per cent of the green harvested produce.

Some times bleaching is done by exposure to sulphur fumes. This changes the colour of the skin of the capsule to white and it helps to preserve it for longer periods. Then they are graded. There are three important grades (1) green cardamom (2) white or bleached cardamom and (3) seeds. The quality of cardamom varies according to place and variety of the seed.

The middle east and Sweden absorbed a large quantity of the exports of cardamom from India.

## 5. Pepper

Kerala is famous for her pepper from time immemorial and is the chief producer of pepper in India. Black pepper which is one of the important spices is produced mainly by India and Indonesia. During the post war period India stands as the largest producer of pepper in the world.

*Climate.*—Pepper being a rainfed crop grows best in tropical regions where there is an average rainfall of 80 inches. The lower and upper limits of temperature in which the crop can flourish are 50° F and 140° F. It grows in places with altitude less than 3000 ft.

*Soil.*—The suitable soils for pepper cultivation are clay loam or sandy loam soils the first being the most suitable.

*Planting.*—The crop is propagated vegetatively by means of cutting. It is a wood climber and requires some support for vines. Jack and mango trees are commonly used as support for vines. Murukku trees are also used. On a plantation basis they are planted at a distance of 10 ft. apart. The vine is rarely allowed to grow beyond a height of 20 ft. lest the plucking of the pepper berries become difficult.

*Plucking:*—The vines begin to bear after three years of planting. Flowering period is from June to July. The harvesting period is from December to March. When ripe the colour of the berries is orange. The berries are allowed to dry in the sun in mats for a week till the colour become black. Some times the skin of the ripe berries is removed before drying. This kind of pepper is known as white pepper and is produced only in limited quantities.

*Yield:*—The yield mainly depends upon the fertility of the soil and the locality. The yield at the first harvest is generally poor. Full yield can be expected from the seventh year. Usually in an acre there will be 300 to 400 standards where pepper is cultivated on a plantation scale. The average yield per standard vary between  $\frac{1}{2}$  lb to 2 lbs of dried produce.

*Life of the plant:*—The life of the plant ranges between 25 to 30 years. But rarely some varieties have been found to live up to 60 years.

*Manure:*—The best manures to be used for the pepper gardens are powdered bean cake, fish guane and dried prawn.

*Diseases:*—One of the major diseases that affects pepper is pollu by which the pepper berries are rendered hollow.

*From garden to market:*—The dried, black pepper is graded and packed. The pepper is generally packed in double gunny bags. Pepper is mainly exported to U.S.A. and U.K.

## 6. Ginger

The three important ginger growing regions are India, Jamaica and Sierra Leoans. Of these ginger producing regions the best variety is seen in Jamaica and Sterra leons. Indian ginger contains more fibre content.

*Climate:*—Ginger requires heavy rainfall. It needs a warm humid climate and considerable shade.

*Soil:*—The soils suitable for ginger cultivation are well drained, sandy clay, loam, red loam or laterite soils.

*Planting:*—Planting usually begins by the end of May or beginning of June before the commencement of the heavy rains. Ginger rhizomes (under-ground stem) are planted. Before planting the ground is ploughed and manured. The seeds are planted in these beds in small pits at a distance of 6-10 inches. After planting the beds are covered with leaves with a view to protect the young shoots from the on slaught of the rain and to serve as manure also. The crop takes nine to ten months to attain maturity. In July-August weeding and manuring is done.

*Harvesting*:—The harvesting is done by digging out the rhizomes.

*Manure*:—Usually cattle manures are used.

*Yield*:—The yield is generally eight to ten times of the seed rate. In Kerala the average yield of ginger is about 1.5 tonnes per hectare.

*Pests and diseases*:—Ginger crop is usually affected by a disease known as soft root. The colour of the green plants are changed into pale yellow and the production goes down. Use of mercuric chloride 0.05 per cent for treating the rhizomes sorted as seed is advocated as preventive measure. Another important disease is known as varmicularia. The leaves become covered with yellowish and brownish spots and gradually dry up. Spraying with bordezex mixture is suggested in such cases.

*From garden to the market*:—Dry ginger as a market produce is prepared as follows. First the outer skin of rhizomes are removed. Then they are soaked in water and kept over night. In the morning they are cleaned well. Then these rhizomes are allowed to dry for a week in the hot sun. They are again cleaned. The ginger is known as the rough or unbleached ginger of commerce.

There is another variety of ginger known as lime ginger or bleached ginger. The process is a bit different from the above. The green ginger is put in shallow cisterns and they are cleaned by water repeatedly. When they are finally cleaned they are put in a solution containing milk of lime for some times after which they are dried in the sun. This process of dipping in lime and drying will be continued a number of times until the rhizomes get a uniform coating of lime.

Then they are graded. There are three important export grades B. C. and D. B. quality ginger will have three fingers. The other two grades (C&D) have two fingers and one finger respectively.

The B and C grades are exported to foreign market. The D. grade being small pieces of ginger is mostly consumed internally in India.

Indian ginger is mainly exported to Aden, Arabia and United Kingdom.

### 7. Lemongrass Oil.

Lemongrass oil which is an important raw material for the perfumery, soap and cosmetic industries is extracted by distilling the leaves of the grass "cymbopogon flexuosus, stapf". The important lemongrass growing areas are Ceylon, Java, West Indies, Malaya, Guatemala and India. Guatemala and India are holding almost a monopoly in the world market. In India Kerala is the most important producer of this crop. The major lemongrass growing areas are Kuruppampadi, Odakkalai, Thodupuzha, Muvattupuzha, Wynad, Taliparamba etc. At Odakkalai there is a lemongrass oil research station.

*Climate*:—It grows on the fertile hill slopes. The grass grows when the monsoon begins.

*Soil*:—It flourishes in hard laterite soils.

*Cultivation*:—Fertile hill slopes with hard laterite soils are selected for the cultivation. During February March the site selected is first cleared of all under growth vegetation by burning them. In April-May the land is ploughed, and is prepared into long narrow beds for cultivation of lemongrass. Usually in one acre 15 to 20 lbs. of seeds are sown. The seeds are sown broadcast. The crop is also grown by transplanting of seedlings raised in separate nurseries. There are two varieties of lemongrass red stem and white stem. The former variety gives better quality of oil containing greater, quantity of citral.

*Harvesting*:—Generally harvesting will begin five months after sowing. The harvesting has to be done before the flowering season of the crop. Five cuttings are annually taken. After the first cutting subsequent cuttings are done at intervals of 30 to 45 days. Usually the harvesting season ends by December.

*Life of the plant*:—The life of the lemongrass plant is 5 to 8 years.

*Yield*:—The yield of the crop under different years is given below.

1st year	1½ dozen bottles of 22 oz. each
2nd „	2½ „
3rd „	2 „
4th „	2 „
5th „	2 „

*From the garden to the market*:—Now in Kerala we are using an old country method for distilling the lemongrass oil. The old apparatus consists of copper boiler, condenser (oil) receiver and wooden tube.

The raw grass and water are put in the boiler specially made for this purpose. The shape of the boiler is like a retort apparatus. Then the boiler is heated with firewood. After some time a mixture of water vapour and essential oil escapes through the copper spiral connected to the retort. This copper spiral is allowed to cool down by immersing it in a wooden bucket full of water. The wooden bucket has an opening near the bottom to let off the water as it becomes hot during the distillation time. The essential oil and water will be collected in the receiver tube. The specific gravity of the essential oil is lower than water. At 30° C specific gravity is 0.878. So naturally the lemongrass oil floats at the top of the receiver tube. Then it is separated from water.

Lemongrass oil is packed in steel drums which has a capacity of 40 to 45 gallons. Lemongrass oil is mainly exported to U.S.A. and U.K.

## 7. Classification of soils in Kerala

<i>District</i>	<i>Type of soils</i>	<i>Details of distribution</i>
(1)	(2)	(3)
Trivandrum	1. Fairly rich brown loam of laterite origin	Middle part of the district
	2. Sandy loam	Western coastal region
	3. Richest dark brown loam of granite origin	Eastern hilly part of the district
Quilon	1. Sandy loam	Karunagappally and part of Quilon Taluk
	2. Laterite soil	Kottarakkara, Kunnathur and part of Quilon, Pathanapuram and Pathanamthitta Taluks
	3. Hill and forest soil	Part of Pathanapuram and Pathanamthitta Taluks
Alleppey	1. Sandy loam	Karthigappally and Mavelikara Taluks
	2. Sandy soil	Sherthallai and Ambalapuzha Taluks
	3. Clay loam with much of acidity	Kuttanad
	4. Laterite soil	Chengannur and part of Mavelikkara
Kottayam	1. Laterite soil	Part of Meenachil-Changanacherry and Kottayam Taluks
	2. Alluvial soil	Vaikom parts of Changanacherry and Kottayam
Idukki	1. Laterite soil	Peermade and Thodupuzha Taluks
	2. Alluvial soil	Devicolam and Udumbanchola Taluks

(1)	(2)	(3)
Ernakulam	<ol style="list-style-type: none"> <li>1. Laterite</li> <li>2. Sandy loam</li> <li>3. Alluvial</li> </ol>	Muvattupuzha and part of Kunnathunad Parur, Cochin and Kanyakannur Part of Alwaye and Kunnathunad
Trichur	<ol style="list-style-type: none"> <li>1. Sandy loam</li> <li>2. Laterite</li> <li>3. Granite</li> <li>4. Clay</li> <li>5. Alluvial soil</li> </ol>	Part of Mukundapuram Trichur and Chowghat Taluks Eastern area of Trichur Western portion of Talappally Northern part of Talappilly Backwater area in Chowghat and part of Mukundapuram Portion of Chowghat and Kunnathunad Taluk
Palghat	<ol style="list-style-type: none"> <li>1. Laterite</li> <li>2. Sandy</li> <li>3. Black soil</li> </ol>	Interior regions of the district Along riverside areas North-eastern portion of Chittur Taluk
Malappuram	<ol style="list-style-type: none"> <li>1. Laterite soil</li> <li>2. Sandy</li> </ol>	Major part of the district barring coastal area Coastal strip
Kozhikode	<ol style="list-style-type: none"> <li>1. Laterite</li> <li>2. Sandy</li> </ol>	Major part of the district barring coastal area Coastal strip
Cannanore	<ol style="list-style-type: none"> <li>1. Laterite</li> <li>2. Sandy</li> </ol>	Major part barring coastal area Coastal area

**8. Conversion ratio between the raw materials  
and the processed product**

Rice:	Rice (cleaned) production 2/3 of paddy production	
Cotton:	Cotton lint production 1/3 of kapas production	
	Cotton seed production 2/3 of kapas production 2 times of cotton lint production	
Groundnut:	Kernel to nuts in shell	70 per cent
	Oil to nuts in shell	28 "
	Oil to kernels crushed	60 "
	Cake to kernels crushed	60 "
Sesamum:	Oil to seeds crushed	40 "
	Cake to seeds crushed	60 "
Caster seeds	Oil seeds crushed	37 "
	Cake to seeds crushed	63 "
Coconuts:	Copra to nuts one ton copra	6775 nuts
	Oil to copra crushed	62 per cent
	Cake to copra crushed	38 "
Neem seed:	Oil to kernel crushed	45 to 50 per cent
	Cake to kernels crushed	50 to 55 "
Sugar:	Gur from cane crushed	10 "
	Crystal sugar from gur refined	62.40 "
	Crystal sugar from cane crushed	9.97 "
	Khandassari sugar from gur refined	37.5 "
	Molasses from cane crushed	3 5 "
Cashewnuts:	Cashew kernels	25 per cent of cashewnut
	Butter from mixed milk	6.3 per cent
	Ghee from mixed milk	5.3 "



## 9. Average analysis and important fertilisers

Sl. No.	Name of fertiliser	Nitrogen (N. per cent)	Phosphate (P <sub>2</sub> O <sub>5</sub> )	Potash (K <sub>2</sub> O)
(1)	(2)	(3)	(4)	(5)
1.	Ammonium Sulphate Nitrate	26.0	..	..
2.	Ammonium Sulphate	20.5	..	..
3.	Ammonium Nitrate	33.5	..	..
4.	Ammonium Phosphate	16.0	20.0	..
5.	Calcium Ammonium Nitrate	20.5	..	..
6.	Nitrate of Soda	16.5	..	..
7.	Calcium Nitrate	15.3	..	..
8.	Calcium Cyanamide	20.0	..	..
9.	Urea	46.0	..	..
10.	Super Phosphate—Single	..	18.00	..
11.	Super Phosphate—Double	..	35.00	..
12.	Super Phosphate	..	45.00	..
13.	Rock Phosphate	..	28.3	..
14.	Hyper Phosphate	..	27.3	..
15.	Sulphate of Potash	..	..	48.00
16.	Muriate of Potash	..	..	50.00
17.	Groundnut Cake	7.00	1.5	1.3
18.	Castor Cake	4.3	2.0	1.0
19.	Mustard Cake	4.5	1.5	..
20.	Muhua Cake	2.5	0.8	1.8
21.	Neem Cake	5.2	1.0	1.4
22.	Gingelly Cake	6.2	2.0	1.2
23.	Coconut Cake	3.0	1.9	1.8
24.	Poultry Manure	1.2—1.5	..	..
25.	Sheep Manure	0.8—6	..	..
26.	Horse Manure	0.8—6	..	..
27.	Farm Yard Manure	0.4	0.3	0.2
28.	Fresh Cow Dung	1.57	0.25	0.18
29.	Compost	0.5	0.25	0.5
30.	Bone Meal	3.5	21.0	..
31.	Fish Meal	4.10	3.0	0.3
32.	Blood (Dried)	11.5	1.5	0.6
33.	Meat Meal	11.0	..	0.6
34.	White Fish Meal	10.0	10.0	1.0

**10. Insect pests affecting paddy crops, their distribution and some practical methods of control**

<i>Sl. No.</i>	<i>Name of pest</i>	<i>Nature of damage</i>	<i>Control measure</i>
(1)	(2)	(3)	(4)
11.	Rice Swarming Caterpillar ( <i>Spodoptera mauritia</i> )	Defoliation plants reduced to stumps nursery and early growing stages attached	Spray D. D. T. at 1.5 kg., a. i. per hectare or endrin at 250 gm. a.i. per hectare
2.	Rice stem borer ( <i>Schoenabius in cestulus</i> )	Caterpillar bores into stem causing 'dead hearts' and 'white ear heads'	Set light traps in the field to catch and destroy moths. Collect egg masses from nursery plant and destroy them
		All stages of plant susceptible to attack	Spray endrin or parathion at 250 gm. a.i., per hectare at intervals of 15-20 days starting from 15th day after sowing and up to flowering
3.	Rice bug <i>leptocorisa acuta</i>	Sucks 'milk' of tender grains leaving them chaffy	Dust B.H.C. or spray endrin or parathion at doses given above
4.	Rice Hispa <i>Di cladispa</i> ( <i>Hispa armigera</i> )	Adults feed on the green matter of leaves and grubs mine the leaves	Spray D. D. T., endrin or parathion at above doses
5.	Rices case worm <i>Nymphua depunctalis</i>	Caterpillar in lead case defoliates	do.
6.	Paddy gall fly ( <i>Diptera</i> )	The maggot bores into central shoot and cause the formation of elongated hallow gall called 'silver shoot'	Spray endrin or parathion at 250 gm. a.i. per hectare 4 times at weekly intervals from 15th day after transplantation set up light traps

(1)	(2)	(3)	(4)
7.	Paddy Mealy bug	Lives within leaf sheaths in colonies sucking sap causing stunting of crop	Spray parathion at 250 gm. a.i. per hectare phosphamidon (Dimecro-100%) solun at 100 ml., per hectare or Dimothocate (Regor at 312 ml. per hectare
8.	Paddy leaf hoppers and Jaosids	Cause-weakening of crop by desapping in colonies	Dust B.H.C.
9.	Paddy leaf roller Cnaphalocrocis medinalis G	Catterpillar folds leaves and feeds on green matter. Attacked fields show white patches	Dust B. H. C. or spray D.D.T. at doses given above.

### 11. List of Centres Selected for recording Meteorological Information

#### *Name of Centres*

#### Trivandrum District

- |                   |                           |
|-------------------|---------------------------|
| 1. Ponmudi        | 6. Neyyattinkara          |
| 2. Varkala        | 7. Parassala              |
| 3. Attingal       | 8. Trivandrum (Aerodrome) |
| 4. Nedumangad     | 9. Vellayani (AM)         |
| 5. Trivandrum (b) | 10. Kovalam               |

#### Quilon District

- |                       |                                   |
|-----------------------|-----------------------------------|
| 11. Pathanamthitta    | 19. Nilamel (Chadayamangalam)     |
| 12. Konni             | 20. Paravoor                      |
| 13. Adoor (Kunnathur) | 21. Kayamkulam                    |
| 14. Karunagappally    | 22. Kulathupuzha (NR)             |
| 15. Punalur           | 23. Kottarakkara                  |
| 16. Kottarakkara      | 24. Tenmalai (Railway Raingauges) |
| 17. Arienkavu         | 25. Quilon do.                    |
| 18. Quilon            |                                   |

**Alleppey District***Name of Centres*

- |                  |                   |
|------------------|-------------------|
| 23. Arukutty     | 31. Chengannur    |
| 27. Sherthalai   | 32. Haripad       |
| 28. Alleppey (b) | 33. Mavelikara    |
| 29. Ambalapuzha  | 34. Kayamkulam    |
| 30. Thiruvalla   | 35. Alleppey (NR) |

**Idukki District**

- |               |                           |
|---------------|---------------------------|
| 36. Chinnar   | 41. Peermade Taluk        |
| 37. Marayur   | 42. Peermade Residency    |
| 38. Munnar    | 43. Vandanmettu           |
| 39. Devicolam | 44. Velloor               |
| 40. Kumily    | 45. Karikode (Thodupuzha) |

**Kottayam District**

- |                   |                        |
|-------------------|------------------------|
| 46. Vaikom        | 51. Changanacherry     |
| 47. Pala          | 52. Kottayam (Agromet) |
| 48. Ettumannur    | 53. Kottayam           |
| 49. Kanjirappally | 54. Pallom             |
| 50. Kottayam      | 55. Kumarakom          |

**Ernakulam District**

- |                          |                   |
|--------------------------|-------------------|
| 56. Malayattur (Kodanad) | 63. Cochin (b)    |
| 57. Parur                | 64. Puthen cruz   |
| 58. Perumbavoor          | 65. Kuthattukulam |
| 59. Alwaye               | 66. Kolani        |
| 60. Neriyamangalam       | 67. Alwaye        |
| 61. Ernakulam            | 68. Piravom       |
| 62. Muvattupuzha         |                   |

**Trichur District**

- |                                    |                                     |
|------------------------------------|-------------------------------------|
| 69. Cranganore                     | 75. Chhalakudy                      |
| 70. Mukundapuram (Iringalakuda)    | 76. Pazhayannur (NR)                |
| 71. Trichur                        | 77. Trichur (Railway<br>Raingauage) |
| 72. Thalappilly<br>(Wadakancherry) | 78. Potta                           |
| 73. Ollukara (Mannuthy)            | 79. Muttathur                       |
| 74. Peechi                         | 80. Thumbtoormoozhi                 |

**Palghat District***Name of Centres*

- |                  |                                       |
|------------------|---------------------------------------|
| 81. Alathur      | 88. Pattambi (Agromet)                |
| 82. Palghat      | 89. Nemmara (NR)                      |
| 83. Parli        | 90. Nelliampathy (NR)                 |
| 84. Ottappalam   | 91. Nattukal (NR)                     |
| 85. Cherplassery | 92. Kollengode (Railway<br>Raingauge) |
| 86. Mannarghat   | 93. Olavakkot (do.)                   |
| 87. Chittoor     | 94. Shoranur (do.)                    |

**Malappuram District**

- |                     |   |
|---------------------|---|
| 95. Periinthalmanna | 98. Thirurangadi                        |
| 96. Ponnani         | 99. Nilambur                            |
| 97. Manjeri         | 100. Angadipuram (Railway<br>Raingauge) |

**Kozhikode District**

- |                       |                                      |
|-----------------------|--------------------------------------|
| 101. Kozhikode        | 109. Mattunga (NR)                   |
| 102. Vythiri          | 110. Lakkidi (NR)                    |
| 103. Quilandy         | 111. Thangarapady (NR)               |
| 104. Badagara         | 112. Calicut (Railway<br>Raingauges) |
| 105. Kuttiadi         | 113. Pantalayini (do.)               |
| 106. Kuttiadi (NR)    | 114. Kakkayam                        |
| 107. Ambalavayal (NR) |                                      |
| 108. Kuppadi (NR)     |                                      |

**Cannanore District**

- |                         |                                       |
|-------------------------|---------------------------------------|
| 115. Kasargod           | 125. Cannanore (NR)                   |
| 116. Taliparamba        | 126. Manjeswar (NR)                   |
| 117. Cannanore          | 127. Vemom (Manathody) (NR)           |
| 118. Hosdurg            | 128. Thirunelli (Manathody)<br>(NR)   |
| 119. Tellicherry        | 129. Konnath (NR)                     |
| 120. Irikkur            | 130. Chandanathode (NR)               |
| 121. Payyannur          | 131. Peria (NR)                       |
| 122. Mananthody         | 132. Chedloth Range (NR)              |
| 123. Mahe               | 133. Cannanore (Railway<br>Raingauge) |
| 124. Kasargod (Agromet) |                                       |

Source—Revenue Board

## 12. Glossary of English, Botanical and Malayalam names of crops

Sl. No.	English name	Malayalam name	Botanical name
1.	Paddy	Nellu	Oryza Sativa
2.	Ragi	Koovaraku	Eleusine Coracana
3.	Jowar	Cholam	Sorghum Valgare
4.	Bajra	Kambu	Ponnistum Typhodem
5.	Kodamillet	Varagu	Paspalum Scrobiculatum
6.	Chama	Chama	Panicum Miliare
7.	Wheat	Gothampu	Triticum Vulgare
8.	Barley	Barley	Hordeum Vulgare
9.	Maize	Mokke Cholam	Zea mays

### Pulses

1.	Blackgram	Uzhunnu	Phaseolus mungo
2.	Greengram	Cherupayar	Phaseolus Aureus
3.	Horsegram	Muthira	Dolichos Biflorus
4.	Redgram	Thuvara	Cajanus Cajan
5.	Cowpea	Perumpayar	Vigna Sinensis

### Sugar

1.	Sugarcane	Karimbu	Sacharum Officinarium
2.	Palmyrah	Karimpana	Borassus flabellifar

### Condiments and Spices

1.	Chilly	Mulagu	Capsium Sapp
2.	Turmeric	Manjal	Cureuma lenga
3.	Cardamom	Elom	Elatteria cardamom
4.	Coriander	Kothamalli	Coriandrum Sativum
5.	Mustard	Kadugu	Brassica spp
6.	Pepper	Kurumulagu	Pipper Nigrum
7.	Curin	Jeerakam	Ciminumoymium
8.	Garlic	Veluthully	Allium Sativum
9.	Long pepper	Thippilli	Piperlongum
10.	Ginger	Inchi	Zingiber officinale
11.	Nutmeg	Jathi	Myristica Fragrans
12.	Cinnamom	Karukappatta	Cinnamomum Zoylanica
13.	Clove	Grampu	Eugnnia Caryophyllate
14.	Cinchona	Cinhona	Cinchona Officinalis
15.	Ar. canut	Adacka	Areca Catechu

Sl. No.	English name	Malayalam name	Botanical name
<b>Fruits</b>			
1.	Banana	Vazha	Musa Paradisiaca
2.	Plantain	Vazha	Mussepietium
3.	Bread fruit	Seemaplavu	Artocarpusincisa
4.	Bullocks heart	Malamumthiri	Anonareticulate
5.	Cashew	Kasumavu	Anacardium Occidentale
6.	Grape vine	Munthiri	Vitis Vinifere
7.	Custardapple	Seetha Pazham	Anona Squamosa
8.	Guaya	Pera	Psidium Guajava
9.	Jujube	Elantha	Aiz rphus jujuba
10.	Jack fruit	Plavu	Artocarpus Integriofolia
11.	Lemon	Naranga	Citrus Lemon
12.	Lime	Naranga	Citrus Aurantifolia
13.	Mango	Mavu	Mangifer Indica
14.	Papaya	Pappaka	Carica Pappaya
15.	Pineapple	Kaithachakka	Ananas sativa
16.	Pemogramate	Mathalam	Punica Cranatum
17.	Sapota	Sapota	Achras Achras Sapota
18.	Pomello	Bamplimas.	Citrus Mahima
19.	Orange	Orange	Citrus retiaulate
20.	Mangosteen	Mangosteen	Garcimia mangesteens

### Vegetables

1.	Tapioca	Maracheini	Manihot Utilissima
2.	Elephantear	Chembu	Celocasi antiquorum
3.	Elephant foot	Chena	Amorphophallus
4.	Potato	Uralakizhangu	Solanumtuberosum
5.	Sweet potato	Cheenikizhangu	Impomoca batatas
6.	Radish	Mullangi	Raphanus sativus
7.	Yam	Kachil	Dioscorea Spp
8.	Turnip	Seema Mullangi	Brassica Campestris
9.	Carrot	Carrot	Daucus Carot
10.	Bed pumpkin	Vellarimathan	Gucurbita Maxime
11.	Brinjal	Vuzhuthana	Solanum Malengena
12.	Tomato	Thakkali	Lycoperseum esculentum
13.	Amaranthus	Cheera	Amaranthus Spp
14.	Lady's finger	Venda	Abelmoschus esaulenus
15.	Bitter gourd	Pavakka	Mamordica Charantia
16.	Bottle gourd	Churakka	Lagenaria Siceraria
17.	Snake gourd	Padavalanga	Trichosanthese angunia
18.	Ridge gourd	Pecchanga	Luffaacutangulata

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TRIVANDRUM, 1984.